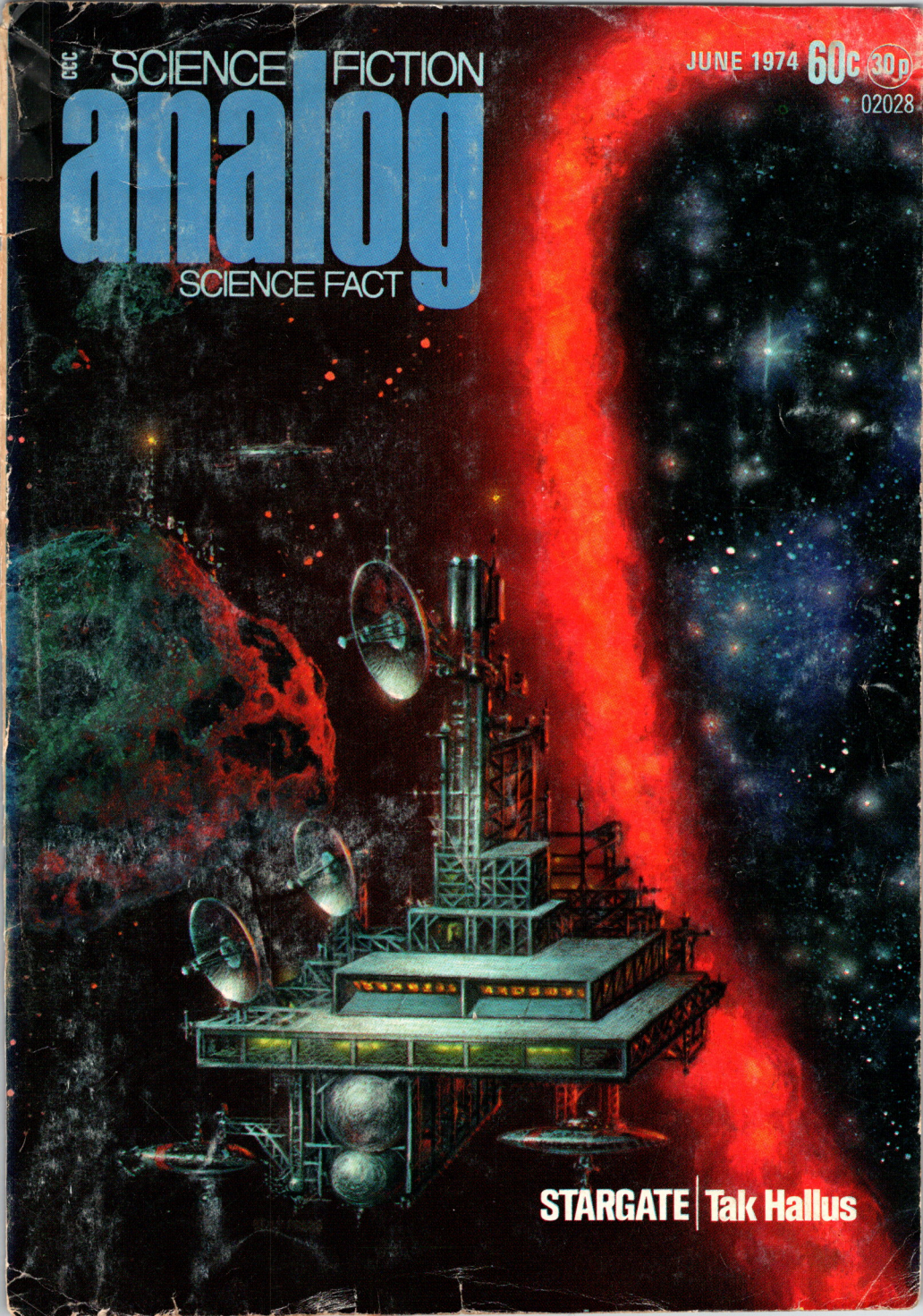
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STARGATE | Tak Hallus

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A Calendar of Upcoming Events

May 31-June 2, 1974:
Scandinavian SF Convention, Stockholm, Sweden. Guest of Honor, Brian Aldiss. The Swedish SF Academy Awards will be presented. Registration: $6. Info: Fancon 2, Box 3273, S-103 65 Stockholm, Sweden.

June 4, 1974:
Partial eclipse of the Moon visible in Antarctica, Africa, Asia, Australia, Europe and South America.

June 10-June 13, 1974:
Joint Congress of the Canadian Association of Physicists and the Canadian Astronomical Society, St. John's, Newfoundland. Info: M.L. Jento, CAP, 151 Slater Street (903), Ottawa, Ontario K1P 5H3.

June 18-June 21, 1974:
Conference on Planetary Satellites, Ithaca, New York. Sponsored by International Astronomical Union—COSPAR. Info: J.A. Burns, 111 Thurston Hall, Cornell University, Ithaca, New York 14850.

June 20, 1974:
Total eclipse of the Sun. Visible in extreme southwest Australia. Perth readers of Analog should consult local newspapers for information.

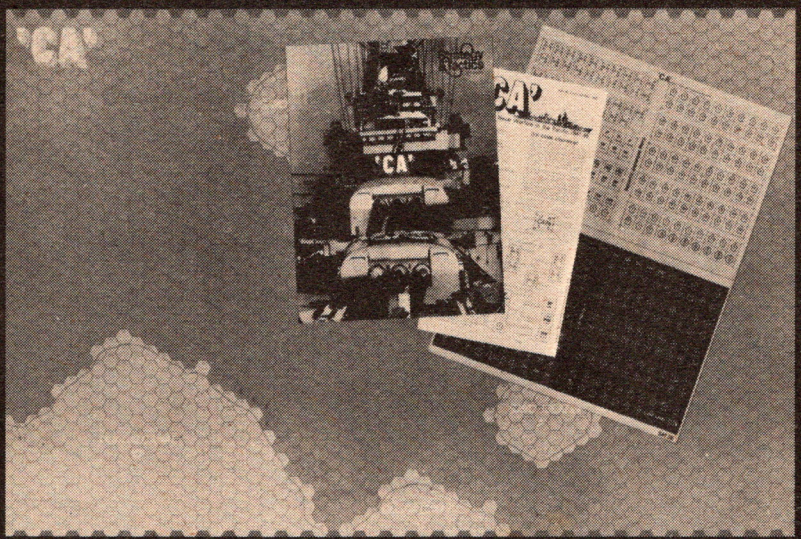
Late June:
MIDWESCON 25, Cincinnati, Ohio. A nonprogrammed "Relaxacon." Info: Lou Tabakow, 3953 St. Johns Terrace, Cincinnati, Ohio 43236.

August 29-September 2, 1974:
DISCON II (32nd World SF Convention), Sheraton-Park Hotel, Washington, DC. Guest of Honor, Roger Zelazny. Fan Guest of Honor, Jay Kay Klein. The SF Achievement Awards (Hugos) and John W. Campbell Award for Best New Writer will be presented. Info: Discon II, Box 31127, Washington, DC 20031

October 31, 1974:
Deadline for entries in the New England SF Association short story contest. Info: NESFA, Box G, MIT Branch, Cambridge, Massachusetts 02139.

—ANTHONY R. LEWIS

Strategy & Tactics



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teaching science fiction

Science fiction courses are being taught at several hundred colleges and universities in the US this year. No one has been able to make an accurate count of how many high schools and junior highs are also giving short courses in science fiction.

Science fiction is also becoming a very popular item in the golden hills of Hollywood. There are literally dozens of feature-length movies and new TV serials being made on science fiction themes and subjects.

This could be very wonderful. It could also be very disastrous.

Those of you with stomachs strong enough to watch a few episodes of the TV series, *The Starlost,* may have noticed that my name was among the list of credits at the finish of the show. I was listed as "Science Consultant." This is something like being Science Adviser to the Nixon Administration: you can give advice, but don't expect it to be taken.

In effect, my association with *The Starlost* has been an experience in teaching science fiction. An experience that ended in total failure and disillusionment. More on that in a moment.

It seems to me that teaching science fiction is not the easiest thing in the world to do. Yet, in most of the colleges and universities that offer science fiction courses, the qualifications of the teachers—*in the field of science fiction*—are either vanishingly small or totally nonexistent.

This is where a possible disaster lurks for those of us who love this field.

We expect, with some justification, that a burgeoning of interest in science fiction on campuses and in movies and TV, will bring about a sizable increase in the numbers of people who can enjoy science fiction. For purely esthetic reasons, this is highly to be desired. Science fiction has been a ghetto literature for far too long; it's time that we took our rightful place in the limelight of American fiction. The greater the number of readers and viewers who enjoy and appreciate science fiction, the stronger and healthier our field will be. We will get more, better, and more varied writing talent devoted to science fiction. And, strictly on the mercenary side, the bigger our family of readers and viewers, the more prestigious and financially rewarding will the field become.

But if this interest on campuses

and in the entertainment world is bungled, if it turns people away from science fiction instead of toward it, then we've lost a magnificent opportunity and doomed ourselves to another generation of literary and artistic ghettoization.

I have seen, at first hand, some of the problems of teaching science fiction, both on campus and in the hectic atmosphere of a television series. Let me tell you about the TV business first.

The Starlost was Harlan Ellison's creation. With typical *elan* and imagination, Harlan envisioned a TV series set on a thousand-mile-long starship that was carrying hundreds of separate national, cultural and social groups to colonization among the stars. The ship was damaged and for centuries it has been drifting, while its various groups of colonists remained locked in their separated environmental domes, each of them fifty miles in diameter. They lost all memory of the ship and its original purpose over the course of many generations.

Not the world's most original science fiction plot, but one that has been the backbone for many good stories. Harlan's idea was to turn this series into a "novel on television," and have each episode advance the total plot of the story, so that over a three-year course the entire story is developed and brought to a dramatic conclusion.

Good thinking. But it overlooked some of the facts of the television industry.

Among those bitter facts was one central obstacle: the show was not bought by a network for prime time broadcast. Rather, it was sold in syndication. Every major city in the US bought the show—a sign of their interest. But, since the networks control the prime evening hours of eight to eleven, the individual stations could not broadcast *The Starlost* during prime time. In most cities, it was being shown at seven PM, either on Friday or Saturday.

This simple fact—lack of a prime time slot—turned *The Starlost* from a bold venture into a travesty of its original concept. For the producers of the show decided that they would not put into it the money that was required to make it live up to its original promise. They had already contracted for Keir Dullea to play the leading male role in the series. That was the last big-money decision they made.

It was all nickels and dimes from there on in.

I agreed to work with Harlan and the people who were actually doing the show, as a science adviser. If you want to see excitement, pathos, burning passions, adventure, intrigue and all the other goodies of the drama . . . then you should have watched what was going on behind the cameras when the show was being put together. What got into the scripts

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was bland. And what got onto the videotape was rancid.

As far as my science advice was concerned, the production crew listened very politely and thanked me profusely, then went off and did it their own way. I read scripts that were absolutely ludicrous, scientifically. I pointed out the problems with each script, in great detail, and suggested solutions to the problems, or alternatives to the story situations that led to the problems.

I could have just as well tried climbing Mr. Everest on my hands, for all the good it did.

After watching one show in its entirety, as it was aired in New York, I quit *The Starlost.* I asked that they take my name off all the shows that I worked on, but they didn't even manage to do that.

Why should this have come to pass? Everyone connected with the show was a fairly competent professional in his or her field, qualified to produce reasonably solid television drama.

But they were not qualified in the critical area of science fiction. Harlan got so disgusted that he quit the show long before I did, and wisely took his name off the list of credits. He substituted his Writers Guild registered pen-name, Cordwainer Bird, which is Harlan's way of giving the bird to those who displease him.

Without Harlan's driving force and SF knowledge the series foundered. No one connected with the show on a day-to-day basis had the slightest understanding of science fiction. And, from the results, it's obvious that a strong understanding of our field's special attitudes, background and capabilities is a prime requisite for any successful show.

My own comments on the scientific side of the scripts would not have been enough to give the show a consistently good science-fictional look, even if my comments had been heeded.

Thus, people who are adequate writers, editors, directors, actors, special effects experts, et cetera—but who lack the special insights of science fiction—have produced a science fiction series that was dreadful.

While hardened science fiction fans may have watched *The Starlost* simply because it *was* science fiction, and because there was occasionally something interesting going on, it's impossible for me to believe that this show attracted any new fans to science fiction. An uncommitted TV watcher would see one episode and tell himself, "If *that's* science fiction, I'm going back to *I Love Lucy.*"

Is the same thing happening on campus?

Those of us who love science fiction think it's wonderful that all those schools are giving courses in SF. But I recently had the some-

continued on page 176

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STARGATE

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TAK HALLUS

I

Desperate? Perhaps. I prefer to think of it as rising to an opportunity. True, it was the only opportunity available, but opportunity, alone or in a herd, is nonetheless opportunity.

In early March, some mogul at Standard Design and Engineering decided to close down the Los Angeles office, my office. If my nose had been farther from the drafting screen, I would have seen it coming.

The ax fell the day after Dolores agreed to marry me. I still felt smug the next morning at the office. I had no particular reason to feel smug. I knew Dolores would accept. If she said no, one of us would have to move out. She still had three months of law school and the bar exam ahead of her. The original plan was for Dolores to finish law school while I got some engineering experience. At that point, we would re-evaluate our "relationship." If it was working, we would pick up the option. It looked as if it would be working, so I advanced the timetable a little.

I couldn't sleep the night I asked her. I tossed, put the pillow over my head, heard imaginary footsteps in the house and some real ones, the dog's. Dog—that's his surname—couldn't sleep either. Dolores, who can sleep through anything, lay prone beside me. She slept through the '18 earthquake as if it were someone rocking her cradle. About midnight, I woke her.

"Dolores."

"Hm-m-m?"

"Wake up."

"Hm-m-m?"

"Dolores."

"Is it time?"

"No. Wake up."

"Hm-m-m?"

She's like that in the morning, too.

"I want to talk to you."

She rolled over and squinted at me. I had the reading lamp on. She shielded her eyes from the light. "What is it?"

"I've been thinking."

"I've been sleeping." She rolled on her stomach, turning her head away from me, fading fast.

"Dolores."

"What?"

"You have a nice back."

"Don't wake me up, Bobby." My mother doesn't even call me Bobby. I tolerate it.

"Dolores."

"Hm-m-m?"

"Let's get married."

"OK," she said.

I sat up and looked at her brown back, delighted. I had expected an argument, logical, legal, irrelevant. She gets that way studying law, picky. "Do you mean it?"

Silence answered.

"Dolores?"

She was asleep.

The next morning, I asked if she remembered our conversation. She

spread honey on a piece of toast and sprinkled it with cinnamon before she answered.

"Sure." She bit the toast.

"Sure what?"

"Sure I remember." She chewed. "You asked me to marry you and I said OK." She bit the toast again, grinning around the bite.

I was smug when I got to the office. I liked the idea. Shacking up has its advantages, but marriage offers a promise. Shacking up, she can always leave. Married, the question is, will she stay? A subtle but significant difference.

I told Bernie Mitchel, the other engineer in my department, at coffee. Bernie is married with four kids. I learned more about design engineering from working with Bernie for two years than I did in seven years at school. When I graduated from Berkeley and took the job with Standard, I thought engineering was done with a drafting screen and my sterling imagination. You get the idea, draw it out on the screen, let the computer redline anything that exceeds the parameters of the material you choose and print out a blueprint. It was that simple in school. No one ever had to build the things we designed.

Bernie took me down to the shop with one of my first sets of prints and told me to build it. The part was a bearing race for the swivel on an old-style Jenson Gate. People argued with me at every step.

First, Folley, the shop computer man, complained I cut the tolerances too close. I quoted theory. The metal could take it. The shop computer could handle the design. What more did he want? He grunted. Once the program was laid in, the tool-and-die-maker went apoplectic. He stormed into my office waving the tool requisition at me. He would have to order most of the machine tools, he informed me, inquiring whether I knew what each one of them cost. I didn't. He told me, tool by tool. He also informed me that a lathe was neither superhuman nor psychic. It could do only what it had been told to do. A milling machine, I learned, had never been trained in acrobatics. In the future, I was instructed to try, if it wasn't too much of a burden on my b-b-sized brain, to design parts he could make with his present equipment. There was a cross-check program in my drafting screen for that very purpose. He left.

Four days later, I had a sample bearing race on my desk for approval. I took it to Bernie's office. He grinned. The grin unsettled me.

"Did you learn anything?"

I nodded. "Quite a bit." I told him about Folley's tolerances and machine tools, adding that the general opinion of engineers seemed to be low.

"Just new engineers," answered Bernie, reaching into a desk drawer at his waist. He brought out a

bearing race and handed it to me. "Look at this. Carefully."

It could have been the race I designed. The few differences were unimportant.

"Where'd you get this?"

"Parts catalog."

I must have blushed. He grinned. In effect, I had re-invented the typewriter. Why design and make an item that requires special machine programs and special tooling when you can order it from a catalog for half the price? I learned a lot from Bernie.

On the day I got the bad news, I told Bernie I was getting married.

"Dolores?"

"Yes."

"When?" He sounded less than enthusiastic.

"We haven't decided yet. Soon."

He nodded, absorbing the information.

"You don't seem overjoyed by the news," I said.

"Frankly, I have some news of my own, bad."

"Connie's pregnant again."

"Worse."

I saw it coming. I was being fired. "Worse?"

"They're closing the Los Angeles office."

"I've always liked Phoenix," I said, hoping for a transfer. The home office is in Phoenix.

"No transfers."

"When did you hear this?"

"This morning. I'm senior around here so I got the glad news first."

"They're canning *you,* too?"

"That's what the note with my severance pay says. I've been calling around all morning. I thought it was only fair to let you get started, too. Severance pay is two weeks for every year with the company. You'll get a month, effective Friday."

"But—"

"That's what I said. Patterson from Phoenix will tell you sometime this afternoon."

I felt angry and upset and defeated and confused. I had leaned out from the horse on the merry-go-round, strained for the gold ring, grabbed at it—sure I got it—only to open my hand and find air. Patterson called that afternoon. As soon as I saw his pinched face on the screen, I snapped, "I know, I know. Thanks a lot," and hung up. I never liked Patterson much. He is the kind of person who enjoys spreading bad news. I enjoyed hanging up on him.

I told Dolores that night.

"So?"

"So I don't have a job."

"So?"

"So we may not eat in the foreseeable future."

"I'm too fat anyway. It's the Mexican in me."

"Don't joke. This is serious."

"You'll get another job."

"Fat chance. Look at this." I fluttered an engineering newspaper

in front of her. "These people don't want design engineers, they want expeditors and managers. They just call them engineers."

She studied the paper, puckering slightly. Dolores puckers when she thinks. I have watched her study, writing summaries of legal case reports, thinking, puckering. Finally, she looked up from the paper, laying it on the kitchen table.

"You're right. Maybe you'll have to take a different kind of job."

I grunted. Seven years of school and two more working at design engineering rarely equips people to sell shoes. Design shoes, perhaps, but sell them, no.

"What kind of job?"

She shrugged. "Look around. We've got a couple of months. If we can stretch things past the bar exam, *I* can support *you.*"

"We'll have to postpone getting married."

"Why?"

"Things are too"—I threw up my hands—"up in the air."

"I don't see what difference that makes. We're living together now. If we get married, we'll still be living together, same bills, same income. It's all the same thing."

"It isn't."

"It is."

"A man should be able to support his wife."

"But not his girl friend?"

I grunted. Talking to Dolores, my conversation tends to degenerate to grunts. It was different. Sending her to law school might have been a mistake. She bickered more.

By Friday, I was reconciled to my enforced retirement. I did very little work during the week. I spent most of my time on the phone getting rejected by weasely-looking personnel directors. It was hard on my ego. The man at the engineering division of Spieler Interstellar was particularly nasty. He not only gave me one of those don't-worry-we-won't-call-you looks, he said it. I added him to my list of hated strangers, along with the phone company and collection agencies.

Just after I got my desk cleaned out, Bernie walked in, beaming. He had a job. It was written on every grinning tooth. I growled at him. His left eyebrow went up.

"Hostile."

"Wouldn't you be?"

"When a friend brings good news? Hardly."

"This is no time for good news, Bernie. I just talked to that creep in engineering at Spieler."

Bernie smiled and nodded. "I hope we meet him in a dark alley some night."

"You talked to him?"

"Yesterday. A jerk."

"Who's your job with?"

"Merryweather Enterprises."

I whistled. Merryweather Enterprises, in spite of its eccentric owner, had a reputation. They paid well, left people alone to work, and

dumped money into some of the most imaginative development programs around. For every ten projects they lost, one paid off and kept them afloat. Spieler Interstellar had the better balance sheet, but Merryweather Enterprises contributed more to the advancement of science and technology. If all you knew about the two companies was who owned them, you would have expected the reverse to be true. Spieler himself was somewhere around thirty-nine, a financial whiz-kid who built twenty thousand dollars in capital into multibillion-dollar Spieler Interstellar in seventeen years. Merryweather, on the other hand, was nearly sixty. Age alone should have indicated who would be receptive to innovation. Age alone was deceptive.

"Doing what?"

"Design. And"—he slipped his hand dramatically inside his coat and withdrew a sheet of paper, dangling it before me by one corner—"I have a little something for you."

"What?"

"Read it."

I read it.

JOB TITLE: Chief Project Engineer.

SALARY: $100,000 per annum.

I whistled again. It was well over three times the salary Standard paid me.

AREA OF RESPONSIBILITY: Project engineer and personnel director, Space Station *Merryweather Enterprize* in solar orbit. Full authority and responsibility for construction project in progress.

"What construction project?"

Bernie shrugged. "Search me."

I pointed at the sheet. "What's this 'z' in *Enterprize?* A typo?"

"I think it's supposed to be a pun. *Enter-prize.*"

"What prize?"

"You got me. Maybe it's a surprize."

BACKGROUND REQUIREMENTS: PhD, Structural Engineering, Astrophysical Engineering, or Subnuclear Displacement Engineering.

I looked up from the sheet. "Matter transmitters."

"That's what it sounds like."

"You can write everything I know about Jenson Displacement on a pin."

"Read on."

ALTERNATE EXPERIENCE REQUIREMENT: PhD, Design Engineering with minimum two years' experience in Jenson Gate design or equivalent. Apply: Merryweather Enterprises, 1422 Campus Dr., Newport Beach, Calif. AN EQUAL OPPORTUNITY EMPLOYER.

I put the sheet on my bare desk. "The PhD I have. The two years' experience I have, but not with Jenson Gates."

Bernie waved away my objection, shooing it like a fly. "Details. You worked on that bearing race for a Jenson Gate."

"Because I can design a door-

knob doesn't mean I can build a house."

"Engineering's engineering. You'll get the hang of it. You're a bright boy."

"Thanks. But this thing may not be engineering. It says *personnel director.*"

"It's engineering."

"How do you know?"

"They offered it to me."

I narrowed my eyes. Bernie is a good engineer. He also runs his life better than most engineers. If he rejected the job, it had a catch. I asked what it was.

"No catch."

"You're sure."

"Sure, I'm sure." He tapped his chest. "My heart."

"I never knew there was anything wrong with your heart."

"There isn't, now. But nobody goes into space after open heart surgery."

I picked up the job sheet and reread it. It still seemed out of my league. Bernie interrupted me.

"I made an appointment for you next Thursday. I also did a little paving the way for you."

"What kind of paving the way?"

"They think an engineering Albert Einstein's coming to the interview."

"Thanks."

"Think nothing of it." He grinned, leaving.

I told Dolores about it that night at dinner. We decided to celebrate

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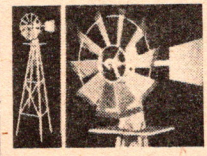

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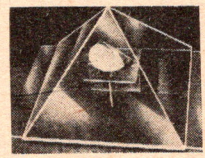

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my unemployment with an expensive dinner out. We went to Don Martín's. Over a steaming pile of *frijoles refritos* and a pair of plump beef enchiladas, ordered by Dolores with that faintly supercilious air of the bilingual, I told her.

"It sounds wonderful, Bobby."

"I'm not so sure."

"Why?"

I handed her the job sheet. She read it, holding a forkful of beans aloft. She looked up, blinked and ate the beans.

"What do you think?" I asked.

"Frankly, I don't understand it."

"What don't you understand?"

She returned the paper to me. "The whole thing. It's gibberish."

I looked at the sheet. It seemed perfectly clear to me. I started to explain Subnuclear Displacement Engineering. She waved a taco at me, cutting off my exposition.

"Just tell me what it means, not what it is." She bit the taco.

"As far as I can determine, Merryweather's working with matter transmitters on their space station. They need a project engineer."

"You'll make a lovely project engineer."

"Do you know what a project engineer does?"

"No, but you'll make a lovely one."

"He shuffles people and papers. The closest I'd get to a drafting screen would be watching someone else run one."

"What are they doing with a Jenson Gate on a space station?"

I shrugged. "You got me. The government uses Gates to supply Tranquility Base, but that's the outside range. After about a quarter of a million miles, the power-distance curve drops off and it's cheaper to use spacecraft."

"You *see,* you do know something about Jenson Gates."

"Dolores, knowing how far a horse can walk doesn't mean you know how he works."

She chewed and swallowed the last of her taco. "How far can a horse walk?"

"I haven't the vaguest idea."

Over the next few days, I thought about the job. I had plenty of time to think. Dolores spent her time either at the UCLA law library or sequestered in the walk-in closet she used for a study. From time to time, sounds erupted from the closet. They ranged from the self-chastising, "Oh, no. That's wrong," to the revelatory, "Ahhh, so *that's* how it works." Dolores becomes very involved with whatever she does. I had wondered what she did all day. She talked to her lawbooks. Dull company.

Dog and I went to the beach several times. March is a good month for the beach, comfortable but sparsely populated. I was still unsure about the job. I talked it over with Dog. Dog is a slobbering Saint Bernard. He eats more than Dolores. I told Dog how little ac-

tual design work project engineers do. He agreed with me, nodding and walking attentively next to me, tongue out, lolling. I told him they only do broad gauge engineering, spotting potential problem areas and making sure someone is assigned to solve the problem. I told him about the catch: you had to see the potential problem. I reminded him how much I had forgotten about Jenson Displacement. He seemed to remember the paper I did in school on some of the potential engineering problems. Dr. Miller had submitted it to a trade journal without my knowledge. When they accepted it, he told me. I gloated at my own brilliance for a week.

"What do *you* think, Dog?"

Dog looked at me with those bloodshot eyes, a piece of pink tongue showing, reminding me how much he ate.

"It *does* pay well."

He nodded. I still had my doubts. We went home and I boned up on Jenson Displacement. I started with my paper. It could have been written in Serbo-Croatian. Technical material slips fast. The mathematical explanation of the technical material slips faster. By Wednesday night, I felt as if I was just starting.

Thursday morning, Dolores straightened my cravat and brushed the hair out of my eyes. I stepped back from her, displaying myself.

"How do I look?"

"Too good. They may have secretaries there."

"I'll bring one home."

"She can help me pack my bags. Nervous?"

"Not particularly." I had decided the job was too much of a long-shot to worry about. Few companies hire twenty-eight-year-old project engineers, especially engineers with only two years of unrelated experience. "I don't even know why I'm going to the interview."

Dolores reminded me of the salary.

Bernie had set up the appointment for eleven o'clock. I took the South Coast Mono to Newport Beach. Seal, Sunset and Huntington Beaches slid past below me. I began thinking about the interview, daydreaming and staring out across the Pacific at Catalina Island. I had as much chance of getting the job as walking to Catalina. But what if they did offer it to me? The prospect intimidated me. I had never bossed any organization more complicated than a Boy Scout patrol. I tried to imagine myself as the square-jawed, firm-handed master of a space station. I noticed my reflection in the mono window and laughed aloud. First I would have to get a square jaw. A middle-aged woman across the aisle peered at me—the attractive but sadly demented young man, laughing at nothing—then returned to her magazine viewer.

I got off at the Newport Center, convinced even a square jaw would not prevent me from wasting my morning. I would meet a personnel director like the one at Spieler. He would read my resumé, smile weakly and thank me for dropping by.

The Merryweather Building towered behind the low Civic Center. In spite of its height, the building reinforced the spacious effect the city planners wanted. Some sort of optical illusion with the side of the building made it seem part of the sky. It only looked imposing when you stood on the broad entrance steps, craning, your square jaw pointing up, examining it. I craned. It imposed. A small brass plaque next to the wide glass doors read "Merryweather" in delicate script. Otherwise, the building was anonymous.

In the lobby, a blond receptionist showing a distracting length of thigh inquired my business, staring priggishly at me over the top of a pair of wire-rimmed spectacles. I never saw her look at anything through the spectacles. I suspect she wore contacts, adding the spectacles for effect. I told her my name and was about to state my business—her expression said, state your business or get out—when her eyebrows went up.

"*The* Mr. Collins?"

What was I supposed to say to that? My father and uncle are the only other Mr. Collinses I know. Neither of them was present. I grinned. "None other."

"Mr. Merryweather will see you in ten minutes."

"Merry—" Slowly, my grin began to feel artificially affixed to my face. It faded.

"You may wait," she said, looking past me over her spectacles, "by the rubber plant."

"By the rubber plant."

"Yes."

The rubber plant was easy to find. It was the only plant next to a couch. I retreated to it with as steady a step as I could muster. By the time I sat down, the blond was busy at the phone, intently relaying the fact of *the* Mr. Collins' arrival to someone on the screen. Butterflies? Yes. Sweaty palms? Yes. Bernie, that master of understatement, had indeed paved the way.

II

"Mr. Collins?"

"Mr. Merryweather?"

"No, Mr. Duff."

"Oh."

The man's forehead, scowling, dominated his face. I stood up and shook hands. Though he was short, his air of disapproval engulfed me. I wondered what I had done wrong. I had neither pinched the receptionist nor poisoned the rubber plant. I concluded Duff must be annoyed at something else. He led me toward the elevator, grumbling as though I were fully con-

versant with his problems and more than half responsible for them.

"I will tell you right now, Mr. Collins," he said, letting me pass in front of him into the elevator, "I am dead set against continuing this folly. Norton is gone. Let *it* go with *him.*" He waved one hand at me as if to brush aside my protestations. "Oh, I know what Mr. Merryweather says. God, how I know! 'An eye to the future is an eye to windward.' Mr. Collins, *I* have *both eyes*"—he indicated them with two forked fingers—"on the present. The last quarterly report to the stockholders—thanks to Norton—looked as if they had ceased manufacturing black ink. It had more parentheses than Pan Am's bankruptcy petition. Norton spent money like we were government-funded. I tell you, Mr. Collins, deficit spending is all right for a government—*they* have *our* pockets to dig deeper into—but it's got a different name in private enterprise. A very ugly name." He glared up at me, stabbing the button for the penthouse office. "Insolvency!"

I looked guilty. "Would a five help?"

He grunted. "Engineers. You people are all alike. Norton used to joke about money." He began waving his hands, talking to the push-buttons on the elevator panel. I suspected the joke had misfired. "Norton had *no* idea whatsoever about cost. Do you have any idea

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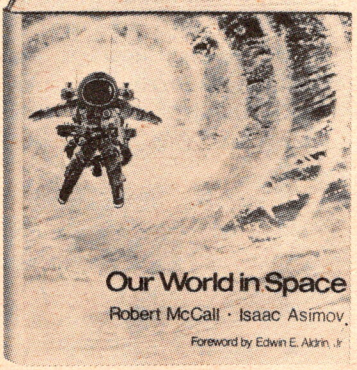

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how much money Norton spent in a month?"

"No."

"Neither did he, Mr. Collins. Neither did he. He threw more money down that orbiting rathole than"—he threw up his hands, unable to find the right analogy, then glared at me—"than *you* can imagine." He returned to staring at the pushbuttons. My ears popped with the altitude.

"*Norton* had Mr. Merryweather's ear," said Duff, emphasizing the name to indicate that *I* would not only never get the ear, I would be lucky to get a lobe. "But Norton is gone now and if *I* have *my* way, Merryweather Enterprises will cut its losses—do you hear me?"

"Cut them."

"We will look elsewhere for profit."

The elevator slowed and stopped. The doors slid open, exposing a long, carpeted corridor. The object of Duff's tirade, passionately felt as it was, eluded me. I still felt I should give some sort of intelligent response. Walking down the corridor next to him, noticing a series of abstracts on the wall—Picassos, Cavaliers—I gave what I thought passed for one.

"What would you suggest as an alternative?"

"A drone fleet, of course," snapped Duff, implying by his tone of voice that my own sense of reality was as seriously in danger as the infamous Norton's. Spieler Interstellar's drone fleet had given its stock the most glamorous luster of the glamor stocks. Of course, a load of pig iron from across the stars, even if it cost a billion dollars to obtain, is still only pig iron. But one hundred thousand tons of high-grade niobium is worth the trip and then some. It has to be. Only one ship in five returns. Duff had a point. There was only one catch. If they eliminated the *Merryweather Enterprize,* they eliminated the job I wanted.

Duff led me down the corridor, past three secretaries—intent on their work—and into the office, a room only slightly larger than my living room and bedroom combined.

Mr. Merryweather stood at the glass wall, hands clasped behind his back. Surveying his empire? Perhaps, mentally. The closer we got to the office, the stupider I got. Once inside, I was close to a low-grade moron. My tongue felt like a whole plum in my mouth. Try talking with a plum in your mouth. Interviews seldom frighten me. I consider personnel directors as dwarf peers, stunted personalities but with enough power to make them equals. Mr. Merryweather, neither stunted nor equal, awed me.

Duff cleared his throat. "Mr. Merryweather."

Mr. Merryweather answered without looking around. "What is it, Phillip?"

"Mr. Collins is here."

Mr. Merryweather turned from the window and brightened. "Mr. Collins." He glanced at Duff. "Why didn't you say so, Phillip?"

Before Duff could answer, Mr. Merryweather dropped down the two steps to the sunken well of the office floor with unexpected agility. A large-framed athletic man, he looked younger than sixty. He pumped my hand and guided me to a low black couch. It sighed under my weight, exuding the smell of leather. He plucked a single sheet of paper from his desktop and sat opposite me in an easy-chair. I sat, watching him, numb.

"Mr. Mitchel," he said, perusing the sheet, "has said good things about you."

Mr. Mitchel? Slowly, I remembered Bernie. I nodded.

Mr. Merryweather looked at me. "Carrot juice?"

"Pardon me?"

"Carrot juice? Pineapple?"

"Plu—I mean pineapple," I stammered, annoyed with myself for being intimidated. Merryweather was only human. A few billion dollars do nothing to change that.

"Relax, Mr. Collins."

I tried. The body remained tense, the brain frozen. Somewhere inside me, my winning personality hid in fright.

Duff left to get the juice. Mr. Merryweather glanced over the sheet of paper, a copy of my resumé. Bernie had thought of everything.

"Was your PhD dissertation published, Mr. Collins?"

Published? PhD? I cleared my throat, forming my answer carefully. My brain began to thaw. Thawing, it emitted steam, a persistent fog out of which I had to pull the relevant data and assemble as complete an answer as possible. I assembled the answer. I uttered it.

"No."

"Too bad. We could use a copy. Could you get us one?"

One what? I had forgotten the title. I could look it up. Yes, that was possible. But the author—who remembers authors?

"Yes."

"Practical Engineering Aspects of Controlled- Laser Fusion Reactors."

Yes. That was it. Now I remembered.

"You spent time at the Lawrence Livermore Laboratory?"

Livermore? "Yes."

Duff returned with the pineapple juice. I took mine, thanked him and downed half of it. My head started to clear. Mr. Merryweather pointed to the resumé, showing it to Duff. "Impressive."

Duff scowled. I cringed. I wanted to explain. I only put the Alameda County Ping-Pong Championship in as a joke. I was angry, angry at Standard for forcing me to have a resumé at all, angry at all the personnel directors who wanted my life spread out neatly on a sheet of paper, angry at myself for sub-

mitting to them. I started to explain. Mr. Merryweather cut me off, reading.

"*Practical Aspects of—*" He glanced up and smiled. "You certainly like *Practical Aspects* in your titles."

"It's an escape if I miss something. Aspects aren't the whole thing."

He laughed. My voice cracked halfway through the sentence, but I got it out intact. A start. I felt better.

"*Practical Aspects of Engineering Jenson Displacement Gates.*" He lowered the resumé.

"It was just a course paper," I said, self-conscious, "that got published."

"But it *did* get published. Frankly, Mr. Collins, you're the first engineer I've talked to who even knows what a Controlled-Laser Reaction *is,* much less basic Gate principles. Did you see my model over there?" He nodded toward a waist-high mahogany cabinet against the wall. On it, a foot-diameter concrete doughnut rested on its edge next to an old analog minicomputer, its six-inch display panel dead. I shook my head no.

"Examine it."

I got up and walked to the model. Moving calmed me. The concrete doughnut was connected to the computer by an inch-thick cable. Mr. Merryweather hoisted himself from his chair and joined me.

"Recognize it?"

"No."

"It's the original Jenson Gate model. One of our affiliates recovered it in Mexico."

He touched the computer panel. It lit, feeding out data in each square of the display. A one-inch circle shimmered in the air at the center of the doughnut.

"Try it. It still works." He handed me my resumé. I rolled it into a half-inch tube and passed it through the shimmering air at the center of the doughnut. Jenson Gate parameters are a function of their size and power. This one had a range of two feet. Half my resumé was in my hand and half floated two feet from the projection surface. I pushed the resumé through. It fell on the cabinet and uncurled. Mr. Merryweather smiled.

"There's beauty in it, Mr. Collins."

I agreed. Even taking a commercial Gate to San Francisco, I am struck with its beauty. Walking to the portal, waiting for the girl to nod, stepping through. No sensation, just one step, a subnuclear dematerialization and reassembly, you're in San Francisco. Simple.

We discussed Jenson Displacement. I tried not to sound like the texts I had just reviewed. By one o'clock, we were into the range limitation problems. My brain, long since defrosted, felt overheated. He glanced at his watch.

"That late. I'm afraid we'll have to postpone the rest of this discussion, Mr. Collins. Would tomorrow morning interfere with your schedule?"

"Schedule? No, not at all."

"Do you have any questions?"

"Just one."

"What's that?"

"What's the job?"

He smiled. "I thought Mr. Mitchel explained that to you."

"He just gave me your job sheet."

"We'll talk about it tomorrow. In the meantime, Phillip will give you transcripts of Norton's progress reports. They should explain most of it. They are accurate up to two weeks ago, just before poor Norton passed away."

"Dead?"

"Yes, unfortunately."

"I was under the impression—" I paused, unsure whether to raise the subject.

"You were under what impression?"

"I thought you had, ah, terminated him for spending too much."

Mr. Merryweather laughed. "You've been talking to Phillip, I see. No, Mr. Collins, development *is* expensive, but I am in business. The essence of business is risk. I take risks with capital. I take risks on people. In both situations, it is expensive. Sometimes I win, sometimes not. But once committed, I remain committed. I trust my judgment. I enjoy finding new fish in

deep water, Mr. Collins. That the fish are sometimes rare and valuable lets me continue the search. To put the matter into a more conventional platitude, you must spend money to get money. The idea frightens Phillip."

"Mr. Merryweather—" protested Duff.

Mr. Merryweather waved him aside, standing and shaking my hand. "Make sure Mr. Collins gets Norton's reports, Phillip."

Outside the office, Duff loaded me up with Norton's reports, a three-inch stack of thin paper. He accompanied me down the elevator, silent, disapproving. Listening to the interview, Duff had evidently become convinced the project would continue. No drone fleet. No profits. I noticed the bags under his eyes. Duff probably slept poorly.

In the lobby, I asked him what happened to Norton.

"He died."

"So I gathered. What of?"

"Egomania, probably."

The look he gave me indicated my own ego was being scrutinized. I held up my thumb and forefinger, spacing them a half-inch apart.

"My ego's minuscule."

"I certainly hope so."

He left me. Had I made an enemy?

The receptionist beamed at me on the way out.

"*Ciao,* Mr. Collins."

And a friend?

Dolores found me in her closet when she got home.

"How'd it go?"

I looked up from one of Norton's progress reports and rubbed my eyes. The more I read, the more convinced I became of Norton's right to egomania. The man was brilliant. He knew more about Jenson Displacement than Jenson. In fourteen months on the *Merryweather Enterprize,* orbiting the Sun in the asteroid belt, Norton had solved problems I only dimly knew existed. The texts I read had never heard of them. Phase shift at the interface, for one. I looked at Dolores, groggy from thought.

"Pardon me?"

"How'd it go?"

"What?"

"Your interview, silly."

"Oh, that."

I told her. She listened, intent, puckering.

"It sounds like Merryweather Enterprises has a new project engineer. What's all that junk on my desk?"

"What?"

"That stuff on my desk, what is it?"

"No. I meant what was that about project engineer?"

"You, of course."

"Me?" Until that moment, the possibility of actually getting the job had never seemed real. Somehow, hearing it from Dolores embodied it.

"I—"

"What's the matter with you?"

"I—"

"Bobby?"

"I—"

"Do you want some water or something? You look absolutely white."

"Ah—"

"Just a minute."

She went out and returned with a glass of water. I drank some.

"Now, what's the problem?" she asked.

"Me."

"I agree. You're a problem."

"It could be me."

Fortunately, Bernie called at that moment. Otherwise, I might have hurt myself with the water glass. I went into the living room to take the call.

He grinned out of the screen at me. "Hi, boss."

I must have looked blank.

"You *do* realize you're going to be my boss."

First Dolores. Now Bernie. I appreciate the confidence people have in me. I just find it misplaced.

"You're a little premature."

"What happened?"

I told him. He nodded, listening.

"That squares with the grapevine, except they got your age wrong. They said you were middle-aged." He grinned again, enjoying it.

"I feel middle-aged. I've been reading Norton's progress reports. If they're ticketing me for that genius' job, they've got the wrong train on the wrong track. That guy makes Leonardo da Vinci look like a draftsman."

"He was."

"Bernie, I can no more fill his shoes than Dolores'."

"Wear your own. You'll do all right."

"You, and Dolores, and Merryweather are all nuts. No, I take that back. Merryweather isn't nuts. He hasn't hired me yet."

"That isn't the way I heard it. He liked you. After you left, he told one of his secretaries he was thinking about hiring a ping-pong champion to run the *Merryweather Enterprize* project."

"Bernie, why didn't you strike that off the resumé?"

"I liked it. See you in the sweatshop, boss." He hung up.

By the next morning, I knew the job was out of my league. Norton's reports boggled me more than the interview with Mr. Merryweather. Perhaps Norton could boss five hundred men and a ten-billion-dollar annual budget with one hand while he practiced the most inspired engineering since Archimedes with the other, but *the* Mr. Collins had trouble bossing one small Chicano. Or is it Chicana?

"Why?" asked Dolores, fixing coffee, angry.

"Why what?"

"Why aren't you going?"

"*Look* at this!" I waved one of Norton's reports at her. "I can't do

this! That's *all* there is to it!"

"You can do it."

"What do *you* know about it?" I threw the report down and stalked into the bathroom. Slapping depilatory on my face and staring at Baby Face Collins in the mirror, I knew I was right. In his right mind, Mr. Merryweather would never hire me. Once hired, I would turn their space station into an orbiting monkey cage. I had resolved to mail back the reports and go to the beach with Dog. I glanced out the bathroom window. It was raining. Dolores came into the bathroom.

"Isn't there any privacy around here?"

"No."

I grunted and rinsed my face.

"Robert."

I knew I was in for it. "What?"

"If you don't go to that interview, I'm leaving."

"So leave. I can see what kind of a wife you'd make right now. 'Robert, you're thirty-four years old and not President of the United States. What's the matter with you?' "

She mumbled something.

"What was *that* crack?"

"I *said,* you have to be thirty-five."

I laughed. Dolores smiled at my reflection in the mirror and came up behind me. She circled my waist with her arms and rested her cheek on my back.

"Bobby."

"What?"

"I love you."

"I love you, too. What's that got to do with anything?"

"Nothing. I just wanted to say it. Why aren't you going back to the interview?"

I turned around and took her in my arms. "I told you. Even if they hire me, I can't do the job."

"Bernie thinks you can."

"What does *he* know about it? He's the one who got me into this in the first place."

"He knows more than you do."

"Says who?"

"That's what you're always saying."

Logic. She had me.

"So?" It was the best I could do.

She pulled her head away from my chest, looking at me. "Unless—"

"Unless what?"

"You're afraid."

"Afraid of what?"

"Responsibility. Five hundred people, ten billion dollars. You *could* fail."

"Yes," I said quietly, "I could fail."

She looked at me. "You *are.*"

"I am what?"

"Afraid!" It delighted her.

"No, I—" I stopped talking. Dolores was right. Five hundred people, ten billion dollars—it scared me stiff. And Norton, that hovering presence of genius, the thought of him scared me as much as anything. Yet, confronting it, verbalizing it with Dolores, shrank it. I needed a job. Merryweather Enterprises had a job. The five hundred

people were hired to help, not hinder. Mr. Merryweather knew my background. If he hired me, he could take the responsibility for my inevitable failure. It was an opportunity, the only one around, true, but nonetheless an opportunity. More than that, it was a challenge. If I could carry through Norton's project, I could do anything. I could be President at thirty-four.

"OK, I'll go."

III

When I got to the Merryweather Building, I had to wait by the rubber plant. The blond glanced at me several times and smiled once. From time to time, she got up and left the lobby. I enjoyed watching her come and go. I even enjoyed watching her stand still. It passed the time.

I was about to ask when Mr. Merryweather would be free when I saw Duff, overcoat flapping, hurrying up the broad entrance steps into the building. He burst into the lobby, shouting for the blond—Pamela—to tell Mr. "M" he was on his way up with an emergency.

He started toward the elevator, then halted, brought up short by my presence.

"You."

I grinned, displaying as many teeth as possible. "None other."

"You'd better come, too. This concerns you."

"Me?"

"Come *on.*" He charged off toward the elevator.

I got Norton's reports and followed. In the elevator, he mumbled to the pushbuttons, ignoring me.

"I told her not to make a scene . . . too late now . . . much too late . . ."

"For what?"

"Good thing she did, though . . ."

"Who?"

"Great man . . ." He spat out the words. "Oh, yes, he was a great man, but not great enough for Mr. "M" to go himself . . ."

"Who?"

"He had to send me . . ."

"You?"

"Ah, here we are. Open up, damn it! Slowest elevator in the building!"

The doors slid open. Duff surged forward, leading me by ten feet. He paused at the secretary's desk closest to Mr. Merryweather's office.

"Who's he with?"

Startled, the girl blinked. "No one at the moment, but Mr. Collins has an appoint—oh, I see you have Mr. Collins with you."

"I've got Collins."

Duff started for Mr. Merryweather's office door. I followed. By his tone, I felt as if I was being fired, that malefactor Collins, caught with his fingers in the till again. I reminded myself they had to hire me to fire me.

Duff barely paused for the office

doors. They opened. Mr. Merryweather looked up from a pile of papers on his desk, recognizing me.

"Ah, Mr. Collins." He rose and started around the desk toward us, stepping into the well area and extending his hand.

"Mr. Merryweather," interrupted Duff. "I must talk to you."

"Can't it wait? Mr. Collins and I—"

"No."

Mr. Merryweather looked at me, lifting one eyebrow. "I sent Phillip to poor Norton's funeral this morning—a great man, Norton. A fine engineer. Have you had an opportunity to look over his reports, Mr. Collins?"

"Yes, and I agree."

Duff, his face contorted in anxiety, fidgeted, trying to break in.

"What *is* it, Phillip?"

"Norton."

"What about him?"

"The funeral."

Duff launched into a frantic account of the funeral. He had arrived late. The service, eulogizing Norton—an activity Duff apparently found repugnant on general principles—was already under way. Inconspicuously, he had edged in the side door of the church. The pews were full.

"I didn't know Norton had so many friends," said Duff. "He must have belonged to a lodge."

Duff had made his way to the rear of the church and sat on a collapsible metal chair by the aisle, Norton's casket clearly in view. The minister, a young man with a goatee, was intoning the standard thesaurus of virtues. Duff had stopped listening, thankful for Norton's closed casket. Seeing Norton again, he said, especially in the beneficent posture composed by the morticians, would have spoiled his lunch. He had spotted Sharon Norton in the front pew, with a black pillbox hat on her head and a black veil covering her face.

"I remember that hat especially," Duff said. "Every time the minister said something like, 'Though Edward is gone from us now, he is not forgotten,' a moan went up from Sharon's—I mean Mrs. Norton's pew and that hat tilted back. It was horrible, just horrible. I knew she would make a scene."

"How *is* Mrs. Norton, Phillip?" interrupted Mr. Merryweather.

Duff stopped, blushed, looked at me with a pained expression, shaking his head from side to side as if denying the innuendo's truth. Mr. Merryweather persisted.

"She did quash the divorce proceedings after his death, didn't she?"

Duff looked uncomfortable, shifting his weight from one foot to the other. "Yes."

"Go on, Phillip."

Duff had listened to her moaning from his place at the rear of the church. The minister had continued, saying that all men were mortal, that Norton was a man,

that therefore Norton was mortal.

"Very logical," said Mr. Merryweather.

Sharon Norton had wailed, the volume increasing with each mention of Norton's name.

"I knew she'd make a scene," said Duff. "I knew it."

"Just tell us what happened, Phillip."

The minister had intoned that no one would see Norton's likes again. Sharon Norton had wailed and stood in the pew. *She must,* she had said. The minister had assured her she would not. *She must,* she had shouted, *one last time!* Barely evading outstretched hands, she had bolted from the pew and stepped to the casket. A murmur had risen from the congregation as she pulled at the upper lid of the coffin.

"Unseemly," commented Mr. Merryweather.

"Indeed. I kept thinking, *Why* is Sharon—Mrs. Norton—doing this? She couldn't expect to get the casket open. They secure them. Frankly, it struck me as overacting. Playing the bereaved widow is one thing. Improvising on the role is something else."

"You can skip the editorial, Phillip."

"Yes, sir."

The minister had abandoned his pulpit, approaching Sharon Norton from behind, his compassionate hands extended. She had her fingers between the coffin and the lid, prying. An instant before the minister reached her, the lid had come up. A gasp had erupted from the congregation. Duff, telling it, flinched, grimacing.

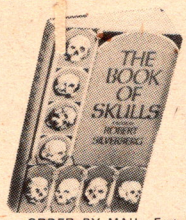
Holding up the lid, Sharon Norton had thrust her veiled face toward the opening. She peered. She groaned. She dropped the lid. It slammed into place. Duff, half out of his collapsible chair at the time, had stood up. She had turned to the congregation, and her voice, when it came, was shaken but audible: *"He's gone."*

"Gone?" said Mr. Merryweather.

"That's what she said."

"Was he?"

"Yes."



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Mr. Merryweather nodded and began pacing the room, stroking his chin and watching his path. He glanced up at Duff from time to time.

"Nothing else?"

"Pardon me?"

"She didn't say anything else, either there or, uh, privately?"

"I haven't talked to her yet."

Mr. Merryweather continued his pacing. Eventually, he stopped, looking at Duff. "He *was* gone."

"Yes."

"Where?"

Duff threw up his hands. "I haven't the vaguest idea. It's probably some joke of Norton's. He never was very considerate of other people."

"I don't think it was a joke, Phillip."

Duff snorted, indicating his disbelief.

"He died by accident," continued Mr. Merryweather. "It gave him very little time to prepare jokes."

"I still wouldn't put it past him," said Duff.

I stood there, listening to their discussion and wondering why Duff had said it concerned me. Unless I was supposed to have Norton's body socked away at home, I was unable to see how. Duff had no idea where Norton was. I had no idea why it was important. Interesting, yes. But important? Only to Mrs. Norton, if to her.

Finally, Mr. Merryweather looked at Duff and sighed. "All right, Phillip. Find out what you can. Call around. And get me an up-tp-date list of *all* Spieler's projects, not just that fossilized drone fleet of his."

"Yes, sir."

Duff left.

Mr. Merryweather looked at me and smiled wearily. "There are times, Mr. Collins, when I regret giving up teaching for business."

"You taught?"

"English. The death scene in *Hamlet*, for example—it's so much more wholesome than real life." He walked to his desk and touched the intercom. "Hold all my calls, Sandra, except from Mr. Duff." He turned to me, sitting lightly on the edge of his desk. "I'm forgetting myself, Mr. Collins. Sit down, please. Juice?"

I declined and sat on the leather couch.

"Have you had an opportunity to examine Norton's reports?"

"Yes."

"And what do you think?"

"He was brilliant."

Mr. Merryweather nodded. "And the project?"

I could have lied. I could have said the project looked excellent, that Norton had solved the major technical problems, that success was just around the corner. Most people like approval and confirmation of their judgment. Mr. Merryweather was not most people. I decided to give a frank opinion.

"You *could* go bankrupt."

He laughed. "Yes, I could."

"Norton seems to have licked the interface problem along with the size limitations. Power is the only drawback, but a big drawback."

"I agree. Norton, unfortunately, saved that problem for last."

"If I could look at his working papers, perhaps—"

"Working papers!" Mr. Merryweather laughed. "Those reports are *all* we have." He tapped his temple. "Norton kept everything in here. He called it a gift. I call it a curse. He only agreed to make progress reports at all because I sent Pamela—our receptionist—you saw her downstairs?"

"The statuesque one."

"Among other things. I sent her to get the reports. He liked Pamela. There was nothing more to it than that, I'm sure. I told him countless times to write things—" He broke off, shrugging. "What's done is done."

Norton's methods struck me as odd. Most engineers only believe a thing is real when they see it on paper, or at least laid into a drafting computer. Trying to remember thousands of complicated specifications is like trying to memorize a Chinese dictionary. Why memorize when you can carry the book in your pocket?

The phone glowed. Mr. Merryweather answered.

"What is it?"

"Mr. Duff, sir."

"Thank you. Put him on."

He moved the phone around so I could see Duff's face and turned up the volume. Duff came on, frowning. The depth adjustment was off, exaggerating the bags under Duff's eyes.

"Mr. Merryweather," said Duff, "I've checked everywhere. Mrs. Norton is still hysterical—she's under sedation—but the morticians know nothing about it either. The man I talked to"—he glanced down at something on his desk—"a Mr. Cunningham, thought I was accusing him of taking it. He was extremely agitated. Apparently, the police and media have already been there. He just snapped that the damn thing was in the box when they shipped it out and hung up."

"What about the delivery people?"

"Same story. They got a closed casket from Cunningham. They delivered a closed casket to the church. Beyond that, we are supposed to contact their attorneys."

"The church?"

"The casket was delivered and sent directly to the chapel."

"All right, thank—"

"I have the list of Spieler's projects."

"Fine. Feed through a copy."

The document feed light on the phone lit and a foot-long sheet of paper emerged from a slot below the screen. Mr. Merryweather glanced at it, reading as it emerged. Duff and I waited.

"Beats me," said Mr. Merryweather, picking up the copy and walking over to me. "See what you can make of it." He handed me the sheet.

Only the strictly commercial ventures like hotels, along with one or two of the technical activities, were comprehensible to me. The projects ranged from business to biology. Number seven on the list, *Drone Phase-Shift Elimination*, caught my attention. Drone ships used a modified Jenson Displacement system to shift themselves across the galaxy. Because of the relatively small mass involved, stability of the Gate field on a drone ship is critical. On short jumps, up to a quarter of a million miles, standard Jenson Gates, grounded against the Earth or the Moon, are sufficiently stable. For longer jumps in space, the minutest improper phasing at the interface means permanent dematerialization. Spieler's ships made two jumps per trip. Poor phase accounted for half the eighty-percent loss rate. Unanticipated accidents accounted for the other forty percent. Even the surviving twenty percent showed significant enough evidence of poor phasing to prevent human beings aboard the ships. The effect on ore, though detectable, was negligible. Life is less stable. What a rock or metal spacecraft can safely do, human beings, if they want to avoid being hamburger, must decline. Drones do their work well enough without human supervisors. I pointed to the item.

"Norton solved this."

Mr. Merryweather nodded. "For our purposes, yes. Possibly for drone ships, too. But *he* doesn't know it yet. At least he doesn't know how."

He, apparently, was Spieler. "Norton never published?"

"As I said, Norton kept everything in his head. I would have asked him to delay publication in any case. For business reasons."

He must have noticed my discomfort. It had occurred to me that *if* I were hired and *if* I developed anything significant, I might want to publish, for the sake of my next resumé if nothing else.

"But *only* delay it, Mr. Collins. We are not in the habit of suppressing matters of technological significance, at least not after our patent lawyers have finished their work. What do you make of the list?"

I shrugged. "Most of it's out of my field."

"Did you notice the item second from the bottom?"

I looked at it. *Giant Molecule Reconstitution, Organic.*

"What is it?"

"I wish I knew. I try to keep current, but the press of business—" He turned to Duff. "Phillip, I want to know what happened to Norton. I want to know if Spieler is involved. I need this information as quickly as possible. Engage Mr.

Smith to help you. Do you understand?"

"Which Mr. Smith, sir?"

"Scarlyn."

Duff looked away from the screen. I heard the sound of pages turning. He read something and looked up at Mr. Merryweather.

"Mr. Smith has been retired for ten years."

An exasperated expression momentarily flickered across Mr. Merryweather's face. "I am aware of that, Phillip. I said engage Mr. Smith."

"But—"

"No buts."

"Yes, sir."

Mr. Merryweather broke the connection, visibly irritated. "There are times when Phillip's caution annoys me. Perhaps his relationship with Mrs. Norton has biased his judgment. A sense of protectiveness may be admirable in private affairs, but business is business, to coin a phrase."

I had missed something. Mr. Merryweather's request for information, though peculiar in itself—I still wondered why anyone cared about the missing Norton—seemed straightforward. His order to hire Smith, whoever he was, seemed clear. Duff's response, that Smith was retired, sounded reasonable. Unless they knew something beyond what they said, Duff's caution and Mr. Merryweather's irritation seemed inappropriate. I asked about it.

"Mr. Smith," said Mr. Merryweather, "is a man of absolute integrity."

He said nothing more. Why anyone would be cautious about hiring a man of absolute integrity was beyond me. We discussed Norton's reports. Mr. Merryweather seemed satisfied with my answers. Fifteen minutes later, warming to my subject, the intercom glowed, interrupting me.

"Yes."

"Mr. Duff, again."

"Put him on." Duff came on, scowling. Mr. Merryweather nodded a curt greeting. "You talked to Scarlyn."

"Not exactly."

"I warn you, Phillip. Do not find excuses. I want Smith."

"I called. A girl answered—his granddaughter, I think. I told her I wanted to talk to Smith concerning business. She said he was retired. I said I knew, but still wanted to talk to him. She brought him to the phone."

"What did he say?"

"Nothing."

"Nothing?"

"He listened. He nodded. That face, I remember it. It used to give me nightmares. What if he had made a mistake, Horace—excuse me, Mr. Merryweather. It could have been *me!*"

"He didn't make a mistake."

"But he *could* have. What would we have done?"

"It would have been difficult,

Phillip. Now, tell me what he said."

"He didn't say anything. When I finished telling him about Norton, he laughed and hung up."

I think Mr. Merryweather smiled. I was at the wrong angle to see his face.

"All right, Phillip. I want you to talk to Scarlyn in person. And take Mr. Collins with you."

"Me?"

Mr. Merryweather looked at me. "You do want the job?"

"Ah—"

He waited.

"I—"

He peered at me.

"I—yes."

"Good. Scarlyn may have some technical questions. Phillip would be incapable of answering them. The girl will give you some papers to fill out at your leisure."

"At my leisure."

On the way out of the building with Duff, the blond, Pamela, winked at me.

"*Ciao*, Mr. Collins, and congratulations."

IV

In the car with Duff, I felt shell-shocked. Duff drove, keeping the turbine Mercedes well under the speed limit. I stared at the road, still slick with rain, thinking. I had expected more discussion, possibly a tour of the *Merryweather Enterprize*, talks with other employees, then time to think. Instead, I got action. One minute I was Robert Collins, hardcore unemployed. The next minute I was still Robert Collins—that fact, at least, I remembered—chief project engineer on a project I had never seen. I asked Duff about it.

"Mr. M makes up his mind fast," answered Duff, glancing at me. "You look a little shaken."

"I am."

"Frankly, Mr. Collins, I have my reservations. Even if I were in favor of this project, putting an untried twenty-seven-year-old—"

"Twenty-eight."

"—in charge, notwithstanding his technical background, strikes me as folly. Some things require more than a purely technical understanding. Age and experience supply the judgment to handle those things."

"Thanks for the confidence."

"Nothing personal."

Smith lived in Seal Beach. We drove up Pacific Coast Highway. I finally relaxed. The more I thought about it, the more I wanted to get started. People like Duff—actually, Duff in particular—annoyed me. Twenty-eight, I was. I considered that fact beyond my sphere of responsibility. If Duff wanted to complain, he could take the matter up with my parents. On the other hand, I was ready—unflinchingly, as they say—to take responsibility for my judgment and abilities. If he had doubts, he could trot me out to the *Merryweather Enterprize* and test them. Otherwise, he could shut

up. I decided to change the subject.

"Who's Smith?"

Duff's relaxed posture stiffened, his hands gripping the wheel. A fierce, thin-lipped expression suffused his face. "A menace."

"Pardon me?"

"The man's a menace."

"Mr. Merryweather seems to think highly of him."

Duff slowed for a signal, looking up at it. It changed. He grunted and crossed the intersection. "Mr. M is not infallible."

"Did Smith work for Merryweather Enterprises?"

"I'd rather not talk about it," said Duff and subsided into glaring at the road. I could see his jaw muscles flexing as his teeth ground.

"You don't like Smith?"

"I *said*, I'd rather not talk about it."

We passed into Sunset Beach. Signs on the broad highway divider advertised the upcoming Grunion Festival. I had once known a Grunion Queen. Attractive girl, in spite of it.

I wanted to know more about Smith, both because it irritated Duff and because I was about to meet him. Anyone so vehemently disliked by Duff must have several redeeming traits.

"I should know *some*thing," I said, "about the man I'm meeting."

"The less you know, the better. I had nightmares about that man for *two* years"—two fingers sprouted from his grip on the wheel—"after his last escapade." Duff shivered, remembering it.

"He sounds like a wild man."

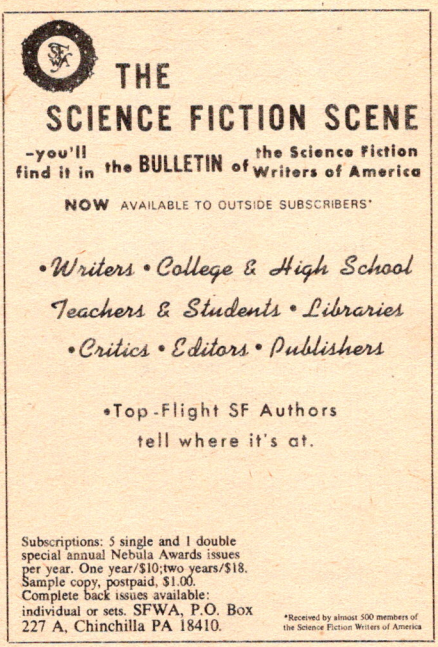
"He *is* a wild man. See this?" He pointed to his right eyebrow. An old scar showed through a thin spot. "*He* gave me that. Permanent disfigurement!"

"What did he do?"

"I'd rather not talk about it."

We found Smith jogging, heading toward us on the far side of the Seal Beach pier, a minute but visible speck, framed in the pier pilings. Duff had walked carefully across the beach, cursing about the sand and hoping they would pave it soon.

"It wouldn't be much of a beach paved," I said.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"It would be better than what they've got now," he insisted, glancing from his shoes to the sand and back to his shoes. He pointed at the pier.

"There."

"Sure it's him?"

"It's him," answered Duff, moving down to the tideline and planting himself in Smith's path. The speck enlarged into a man, arms pumping, chin extended. He passed under the pier, disappearing momentarily into the shadows, then emerging. Duff waved his entire arm overhead.

"Mr. Smith!"

Smith, sweat darkening his gray sweatsuit and matting his gray hair, jogged. He either failed to see Duff—an unlikely explanation considering the wag of Duff's arm—or ignored him.

"Mr. Duff," I said, leaning toward him. Smith was about ten yards away, sneakers slapping on the wet sand, his expression set in a fierce charge. "I think we'd better get out of the—"

"Nonsense," scoffed Duff. "He'll stop. I—"

"OUT OF THE WAY, DUFF!" roared Smith, charging.

Panicked, Duff looked frantically from side to side, then hopped out of the way. Smith jogged between us, nodding curtly to me. "Morning."

He looked about sixty. Scrawny, spindly, lanky—even in the baggy sweatsuit, any of them fit. Duff began trotting next to him. I followed.

"Mr. Smith."

Smith jogged.

"I have to talk to you."

"So talk."

Duff's bobbing head barely reached Smith's shoulder. His width emphasized it. A wave tumbled and broke, sliding up the beach toward us. We dodged, three athletes out for their morning roadwork, one in a sweatsuit, two in business suits. I began to taste the salt air, inhaling deeply.

"Here?" asked Duff.

"You're getting fat, Duff."

Duff's step faltered. He dropped back, giving me a shuddering look. Why, it asked, were the woes of Phillip Duff compounded by people like Smith. Smith's shoulders, sweat-soaked, moved like a boxer's in front of me. Duff caught up with him, starting to pant.

"Mr. Smith," persisted Duff. "I can't . . . keep . . . this . . . up . . . for . . . long."

"Back in a minute."

Smith stretched out, loping down the beach. Duff's all-out run, matching Smith's jog, dribbled to a walk. He stopped. He leaned on his knees, breathless, speechless, incapacitated. I caught my breath, sweat beading on my forehead, and watched Smith run. He dwindled, passed the near edge of a line of houses and broke his stride. He started toward us, withdrawing something from the pocket of his

sweatsuit and looking at it.

Duff, still leaning on his knees, made rasping noises and spat on the sand.

Smith approached, scrutinizing the object in his hand, a jogwatch, one of those hybrids, half pedometer and half stopwatch. He looked at me, his tan face glistening. The skin over his cheekbones had the yellowish sheen of polished mahogany.

"You people slowed me up," complained Smith.

"Sorry."

He nodded at Duff. "What's his problem?"

"Winded."

Smith snorted. Duff gurgled and spat.

"What did he want to talk to me about?"

"Norton, I think."

Smith laughed, a gravelly, croaking sound that subsided into a growl. "Funniest thing I've heard all week."

Duff, recovering, stood up, his face red from leaning on his knees. "Mr. Smith, it is not . . . in the least funny. It is . . . quite a serious mat . . . ter."

"For you. Not me."

Smith started across the beach toward his street, returning the jogwatch to his pocket. Duff followed him, still catching his breath. I followed Duff. Smith pulled a bent cigar from his pocket, straightening it with both hands.

"Mr. Merryweather," began Duff, walking next to Smith, "is prepared to offer—"

"I'm retired," interrupted Smith, clamping his teeth down on the cigar and talking around it. He struck a wooden match on his thumbnail. It flared. He lit the cigar, puffing, sweat still shining on his face.

"Mr. Smith—"

"No. Simple enough?"

"We can at least discuss the matter."

Smith glanced at Duff, continuing to puff his cigar, and shook his head. He had said no. What more did Duff want? A stream of gray smoke trailed Smith. I tried to avoid the fumes. He paused near a deadend barrier on his street, smoking, listening, saying nothing. Duff talked quickly, trying to prevent Smith from interrupting. Smith seemed to have no intention of interrupting. When Duff ran down, Smith extracted the cigar from his mouth and spat. He pointed the wet end at his house.

"See that?"

Duff looked at the house, irritated at the diversion. "Yes."

"Like it?"

"It's a very nice little house, Mr. Smith, but—"

"Looks like a bank to me."

The house, a wide, two-story structure in Neodoric style—plastone pillars spaced at intervals across the façade—did look like a bank. I wondered about the abrupt transition from Norton to Smith's

house. Then I remembered Smith had already given his answer, *no.* If Duff wanted to chat, Smith would chat. Smith, retired, had little else to do. All he asked was equal time. Duff wanted to talk about Norton. OK, Smith wanted to talk about the house. Duff missed the point.

"Mr. Smith," said Duff, "I did not drive up here to discuss architecture."

"Too bad," said Smith, turning to me. "What do you think?"

"It looks like a bank."

"My son-in-law owns it." He paused, puffing. "Banker. Likes his buildings solid. Lives in a paper empire and likes his buildings solid." Smith nodded at the house. "There's something to it."

I laughed. Duff tried to interrupt. Smith silenced him with a wave of the cigar. It was Smith's turn.

"Harold's mother—awful woman," continued Smith, the cigar butt poised six inches from his mouth, "wanted him to be a banker. Can you imagine a mother *wanting* her son to be a banker. Security, she said. Build not thy house on sand. She had five husbands." He looked at me. "Something in that, too." He pointed with the cigar. "That's Harold's wife down there watching us."

"Your daughter."

"More or less."

I looked at the house. The curtain of a side window was drawn slightly aside.

"I'd invite you in," said Smith, "but they don't *allow* me to smoke inside." He puffed. "Might spill ashes on something in my dotage."

I could see Smith enjoyed the pose, playing the old man.

"Mr. Smith," said Duff, his expression agitated, "at least say you'll think about it."

"I'm retired, Duff. Why should I go traipsing around after this joker Norton's carcass? I've got everything I need right here. All day to myself. Putter in the garden." He paused, puffing. "If I liked puttering in gardens. No headaches. Feed the pigeons cigar butts—plenty of things to do. Got it made. I've got everything I need, money, cigars—" He looked at the house, still playing the old man. The curtain at the side window fell into place. When he spoke, the humor had drained from his voice. "A loving family."

He broke off the pose, flicking the cigar butt into the street. "Nope. Sorry, Duff. Tell Horace I'm out of it. Tell him he ought to get out, too." The humor returned. "Three hots and a cot. That's all us old men need."

"What can you lose," persisted Duff, "by saying you'll think about it?"

Smith exploded, now playing the cranky old man. *"All right! Damn it!* I'll think about it! I'll think about it and then I'll say no!"

"Fine. Fine," said Duff, reaching out and shaking Smith's hand with both of his. "We'll contact you later for your answer."

"Nice meeting you, Mr., uh—"

"Collins."

We left. Duff drove me home. In the car, turning off Smith's block, I said, "So that's your wild man," trying to put as much irony in my voice as possible. Duff answered yes, firmly and clearly, cursed Smith, cursed Norton and fell silent.

When I got home, Dolores was talking to the refrigerator, mumbling about the effect of a plaintiff from Wisconsin suing joint tortfeasors from Hawaii and New York in Nevada for negligently transplanting a kidney in Florida. She does that, mumbles, paces, stops, explains the situation to herself again, paces, mumbles. I asked her where the kidney was from.

"Don't confuse me—oh, Bobby!" She closed the refrigerator. I wondered how long she had been standing there, letting out the cold.

"*Mr.* Collins, please, or *Chief,* if you prefer."

"*You got it!*"

I nodded.

She grabbed me in a bear hug, pinning both my arms to my sides and hopping up and down. She squealed. "I'm so happy!"

"At least you'll be rid of me for a while. Let go, please."

She stopped hopping, still hugging. Her expression looked blank. "Be rid of you?"

"You didn't think I'd work down here, did you? Most of it will be up there." I glanced at the ceiling. It needed painting. "Let go, please."

"I thought—"

"You thought what?"

"I don't know. I didn't really think about it. How long will you be"—she glanced at the ceiling—"up there?"

"Who knows?"

"Bobby."

"Hm-m-m?"

"Are there any girls"—she looked at the ceiling, again—"up there?"

"Girls go to purgatory first. Let go."

"Answer me. Are there any girls?"

I tried to shrug. "I don't have any idea."

She let go. "I hope not."

"Why?"

"I don't want to lose you to some free-fall floozy."

"Free-fall what?"

"Floozy."

"Where did you get a word like that?"

"It was in an old case I read. Or maybe it was flivver. One of them was a car and the other one was a girl."

"Flivver sounds more like a girl to me."

"You're distracting me. How long will you be gone?"

I tried to estimate. A matter transmission to the Tranquility relay station and from there to the Intraplanet station took a little over two seconds. A ship from there to

the *Merryweather Enterprize* took a week. It would take several more weeks to familiarize myself with Norton's project, the station, its crew and their assorted problems. Then, perhaps, I could take a break. Somewhere I had read that the standard Earthside rotation was three months.

"About three months."

"Three months! What am *I* supposed to do for *three months?"*

"Study?"

"When I'm not studying?"

"Remember me?"

She made a noise something like *harumpf.* "I'm not so sure this job was a good idea."

"It pays well."

"I don't care. What good's money if there isn't anyone to spend it with?"

"You're the one who was going to walk out if I didn't take the job."

"Maybe I was wrong."

"Dolores, it's a great opportunity for me."

She came over and leaned her cheek against my cravat. "I don't like the idea of being away from you that long."

I was about to lead her into the bedroom, when I heard the phone. I cursed and walked down the hall to answer it. I heard the refrigerator open behind me, then Dolores shouted, "Tell Bernie I think his idea stinks!"

It wasn't Bernie. It was a middle-aged man with sweeping salt-and-pepper sideburns. A roll of flesh under his jaw obscured his chin. His mouth, angry, and his eyes, glowering, startled me.

"Mr. Collins?"

I considered denying the accusation. "Yes."

"My name is H. Winton Tuttle."

He waited. By his bearing, I knew I was supposed to react to his name, to exclaim, *"Oh, Mr. Tuttle."* Presumably, to grovel. "Nice meeting you." I started to hang up.

"I have tried, Mr. Collins, repeatedly, to contact Mr. Duff."

"He isn't here."

"I'm aware of that." His tone, a mincing sort of monotone, annoyed me. "After trying *numerous* times, I realized Mr. Duff did not wish to speak with me."

I could see why. "What can I help you with?"

"You visited my father-in-law this morning, did you not?"

Father-in-law? Other than Mr. Merryweather and Duff, I had visited only Smith. H. Winton Tuttle. "H"? It was Harold, the banker.

"Your father-in-law's Smith?"

"Yes. I wanted to tell Mr. Duff, and I do tell you, I absolutely for*bid* you to hire him for this insane business. You *know* what happened the last time."

"No."

"Ask Duff. I for*bid* it! Mr. Smith is an old man. He—"

"He does look over eighteen."

"What does that have to do with anything?"

"He can make his own decisions."

"He is seventy-five years old, Mr. Collins . . ." It was still over eighteen. "And *too* old to be taking this kind of a job."

I started to say that Smith seemed inclined to refuse our offer, but Harold cut me off, working himself up.

"Oh, I *know* about the past, Mr. Collins. Janet and I have worried ourselves sick about him. That time in Tangier—horrible—he came home with scars all over his back and a broken clavicle, he—"

"From what?"

"He wouldn't say. He just shrugged and said, 'You should have seen the other guy.' And that trip to Hank'ou—"

"You worried."

"We didn't even know he was *gone. Three* broken fingers . . ." Harold held them up like a Boy Scout salute. I felt like returning it but restrained myself. "And a ruptured appendix."

"A ruptured appendix?"

"He denied it had anything to do with the trip, but *I* know different."

"You do."

"Rice isn't healthy, Mr. Collins. I tell you these things to impress upon you that I will not have it! If you and Duff persist, remember, I have lawyers, Mr. Collins, very *good* lawyers!"

He hung up. Dolores wandered into the living room with a casserole dish in one hand, packing vegetables into place.

"Who was that?"

"Crank call." The phone hummed again. Dolores reached for it. I intervened. "I'll get it. Busy day. What's for dinner?"

"It's a vegetable and rice casserole."

"Rice's unhealthy."

She glanced at the dish, frowning. "Bobby, it is as healthy as—"

"Let me get the phone." I answered it.

It was a big day for strangers.

"Mr. Collins?"

The man's face, as corpulent as Harold's but somehow healthier, seemed calm. I knew who it was. First one stranger calls, irate, threatening me with his lawyer, then another stranger calls. Two plus two. The lawyer.

"You're Tuttle's lawyer," I snarled.

"Who?"

That got me. He really was a stranger. "Pardon me. My mistake. What can I do for you?"

"My name's Parry. I would like to talk to you. You *are* Robert Collins of Merryweather Enterprises?"

"Yes."

"I had expected—" He shook his head. "Never mind."

"You expected what?"

"Someone older."

"Nope. Just me, the punk kid." Having my chronological age impugned twice in one day angered me.

"I didn't mean to upset you, Mr. Collins."

"You didn't. Talk away."

"In private, personally, if that's possible." His tone was businesslike and efficient.

"Concerning what?"

"I may be able to offer you certain technical assistance."

Suddenly, it hit me. I was, after all, the *Merryweather Enterprize's* new chief project engineer. Project engineers order material. Parry was a salesman, the first of how many?

"I'm not interested, Mr. Parry. At least not now. You can leave any literature you have for me at the Merryweather Building. I have to get my feet on the ground before—"

"Off the ground," corrected Dolores, listening to the conversation.

"You misunderstand, Mr. Collins. I'm not *selling*, I'm *giving*."

"What?"

"That's what I wanted to talk to you about."

"Fishy," said Dolores.

"Pardon me?" said Parry.

"This casserole dish smells fishy."

"Mr. Collins," continued Parry, "this will take very little of your time. Perhaps, lunch, tomorrow."

"Actually, I have quite a few things to do tomorrow, it—"

"It will be, I promise, to our mutual benefit. Do you know the Civic Center Shopping Mall in Newport Beach?"

"Yes."

"I will be at the *Vier Jahreszeiten*—you do like German food?"

"I prefer Mexican," I said. Dolores smiled.

"I will be there after twelve o'clock. I hope you will come."

"I'll think about it."

"Can I come, too?" asked Dolores. I flapped my hand at her out of camera range, trying to get her to shut up. I had no intention of eating sauerkraut and *Schwarzwälder Rehrücken* for lunch, much less talking to Parry.

"Bobby," insisted Dolores. "*I* like German food."

"You're certainly welcome to come, Miss Gomez," said Parry.

That stopped me. He knew Dolores' name. I had heard of salesmen researching potential customers, but Dolores was none of his business.

"How did you—"

"I'm looking forward to seeing you, Mr. Collins." He hung up.

Dolores walked back down the hall, singing something that would probably have passed for "*Ich hab' mein Hertz in Heidelberg verloren.*" Cocky. Undergraduate language major—Spanish, German. I started after her, deciding how to explain. Lunch tomorrow was out. The phone hummed again.

"If that's Bernie," shouted Dolores from the kitchen, "invite him to lunch tomorrow. *With* Connie and the kids. We'll make your man Parry's expense account work for its living."

"You think he was a salesman?"

"What else?"

I answered the phone. It was Smith.

V

"This is what I want you to do between now and Tuesday," began Smith, talking even before his face settled on the screen. "Find out everything you can about Norton's work. I want to be able to pinpoint where he was on any given problem—"

"Smith."

"Don't interrupt—at any given time. I want to know who he talked to, when he talked to them and what about. I want—"

"Smith."

He stopped, staring at me, annoyed at the interruption. "What is it?"

"Norton kept everything in his head."

"I know. I want you to take those progress reports and correlate them with the security recordings of his phone calls from the *Meryweather Enterprize*."

"What you need is a clerk, not an engineer."

"Then—"

"Wait a minute."

"Then I want—"

"*Wait* a minute!"

"What?"

"First of all, Norton worked up there"—I jabbed my thumb at the ceiling—"for fourteen months. Say he made ten calls a day. That's over four thousand calls. Second—"

"Use the computer at the Meryweather Building. I cleared two hours on it for you tomorrow morning."

"Tomorrow's Saturday."

"With what they're paying you, you don't have any Saturdays."

He had me there. "But why me?"

"It's got to be you. No one else would understand the conversations."

"You're assuming *I* would. Second," I said before he could rumble over me. I paused to see if he would interrupt.

"Go on."

"Second, I thought you were retired."

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His intense expression broke, replaced by a wide grin, deep crow's-feet corrugating his temples. He leaned back in his chair, cradling his head in his hands, grinning at me between his elbows, a man with all the time in the world. When he spoke, his voice was folksy and languid. "I am, my boy. Us retired folks got plenty of time on our hands. Them pigeons can only eat so many cee-gars. I told Horace—good ol' boy, that Horace—I told him I'd look around. Nothing like a missing cadaver to perk up a man's interest."

"What's so important about Tuesday?"

"That, buddy boy, is when we're visiting your little floating junk-box." He jerked his thumb at the top of the screen, mimicking me. "Up there."

"Tuesday."

"Yep. That is, if you can pass the physical Monday." He beamed almost childishly. "I can."

"So can I, Smith. You said 'we'."

"I did, Roberto." I smiled. Somewhere he had picked up my first name. Probably from Duff. He leaned forward, lowering his arms to the table in front of him. The old man pose disappeared, his voice returning to normal. "I want to know *every*thing about Norton. I want to know him better than his wife."

"That shouldn't be too hard."

"Oh?"

"Talk to Duff about it."

"Duff?" He paused, thought and grinned. "That old devil."

"It's just a rumor."

Smith chuckled. "OK, and tell me anything unusual that happens to you, too. You're Norton's successor."

"Lately, that covers most things. But there was—"

"What?"

"Probably not important."

"Who knows what's important? Try me."

"Someone named Parry called and wanted to make a lunch appointment with me."

"Parry." He said the name in a flat tone, thinking. "Never heard of him."

"Neither have I."

"I'll see what I can turn up."

"And—"

"And what?"

"Harold called."

Smith exploded, this time playing neither the retired old man nor the cranky old man. "That meddling son-of-a-bitch! If he calls you again, hang up!"

"Sorry I mentioned it."

Smith churned a few moments, trying to control himself, then calmed down. "Excuse me. Get that correlation done as quick as you can."

He hung up.

I called Duff, verified Smith's authority to give orders and my access to the Merryweather computer. A technician would be getting overtime to help me lay in the pro-

gram. When I got off the phone, Dolores was dressed to go out.

"I thought we were having that casserole?"

"No. We're celebrating."

Any excuse to avoid cooking. She led me out the front door. Behind me, I thought I heard the phone hum.

Saturday morning at nine, I was inside the Merryweather computer center. The day outside—what I saw of it hurrying from the mono station to the building—invited anything but mental work. I had expected a dreary morning, the technician and I, alone in a silent building. Instead, I had trouble finding her among all the people. Merryweather Enterprises functions twenty-four hours a day. The sun, they tell me, never sets on the empire.

I found the technician, a middle-aged woman with frizzy hair and the face of a Pekingese, watching a comic viewer, chortling when the quick-witted rabbit thumped the dull-witted dog. She proved brighter than she looked. She converted Norton's phone calls to a program in half an hour: "to," "from," and with my help, "subject." She seemed to think the task was a laughable waste of valuable computer time. I admitted it was a borderline case. Too long to do by hand, too short to do by computer. Norton made 7.23 calls per day in fourteen months, she informed me proudly. I thanked her. I didn't care, but I thanked her.

The progress reports were harder. Summaries, they had to be broken into a chronological table of events for each report, then programmed. I tried various ways of cross-indexing—people, subject, time of day—anything. Graphed, little knots of people clustered around each step in development, names dropping out with each problem solved, names being added with each new problem. Only when I asked for random associations—calls deviating from the cluster pattern—did anything startling appear. Toward the end of the period on the timeline marked "Interface Phase Shift," one item stood out—"lone" is always random—a name, Parry.

"Get me this tape, will you?"

Hilda, the technician, grumbled about not being an errand girl and disappeared. She returned with the tape. I dropped it into the playback slot on the phone. A split screen showed Parry and someone I had never seen.

"Norton," I said, adjusting to his gaunt face. Somehow, I had pictured Norton as healthy. His mind—incisive, sharp, brilliant—suggested a sound body. His appearance on the tape—haggard, dark circles under his eyes, a nervous habit of pinching his lower lip between his teeth and chewing it—suggested overwork and neurosis. Would I look like that in a year?

"What do you want, Parry?" said

Norton, his tone condescending.

"Mr. Norton, I—"

"*Dr.* Norton."

Parry nodded, tolerant. "I just called, Doctor, to remind you of our appointment."

"Listen, Parry, I'm perfectly capable of remembering my appointments. I am not some doddering old imbecile."

"No one suggested you were."

"Saturday. Noon. Four Seasons. Right?"

"Yes. *Vier Jahreszeiten.* You *will* be there?"

"I'll be there." Norton hung up. I withdrew the tape. I sent Hilda home and waited for Smith.

He arrived in red and white houndstooth slacks and an off-white shirt. Spiffy. He threaded his way through the computer center crowd, waving and smiling when he saw me.

"What ya got there, buddy boy?" he asked, noticing the tape disk in my hand.

"Maybe nothing."

"Play it."

I played it. Smith watched, studying Norton as much as Parry. Concentrating, he puffed out his cheeks, slowly releasing the air, musing. I watched over his shoulder. Parry reminded Norton of the appointment. Norton chewed out Parry. The tape ended.

"Play it again," said Smith.

"Again?"

"It takes a while for us doddering old imbeciles to absorb things."

I played it. Smith watched, cheeks puffing. The tape stopped. Smith looked up at me.

"How about lunch?"

"OK. Where?"

"*Vier Jahreszeiten.*"

"You're sure Parry will pick up the tab for both of us."

"I can't make it."

"But—"

He rested one brown hand on the phone. "I've got to stay here and get to know Norton."

"Don't you think you'd do better to find out where Norton's body went?"

Smith shrugged. "What's in a body? It's the *man* I want to know. First things first. First, we find out why they snatched him—assuming he wasn't just mislaid—then we know where and who." He pulled the tape disk from the phone and began tossing it in the air like a coin. It hopped in front of my eyes, spinning, and fell into his palm.

"Did you know," he began, flipping the disk, relaxing and watching it, "that Fenton Laser Products employs Parry?"

"No."

"Did you know that Golden Star Hotels owns the controlling interest in Fenton?"

"No."

"It does."

"Good for them."

"Did you know that Wentworth Foundry, Inc. owns Golden Star?"

"Ducky."

He named several more companies, each owning the next, working his way up the pyramid. I began to lose both track and interest.

"And Farmer Electronics owns Palmer Tantalum, did you know that?"

"Smith."

"Hm-m-m?" He flipped the disk.

"How long do these begats go on?"

"A fer piece, buddy boy. It kept me up till past an old man's bedtime. I want you to appreciate that."

"Did your teddy bear get cold without you?"

"Nope. And Farmer Electronics is owned, predominantly, by Rosecrantz Boatyard."

"A *boat*yard?"

"It's a holding company. And Rosecrantz—"

"OK, OK." I flapped my hands at him, trying to silence him. "Enough. I'm going to lunch, since that's what you seem to want me to do."

"Yep. You'll like it as long as—" He flipped the disk, watched it spin, and caught it.

"As long as what?"

"As long as they don't have that damn oom-pah band going. That fat burgher on the tuba can deafen at a quarter mile."

I started across the computer center toward the door, beginning to doubt Mr. Merryweather's wisdom in hiring Smith. Norton's body was out there someplace. Smith was supposed to find it. Instead, he was climbing some meaningless corporate family tree. The tree grew without bearing fruit. At the door, I heard my name being called over the din of voices and footsteps. I looked back. Smith was standing on his chair, hands cupped around his mouth, shouting at me.

"What?" I yelled, holding my hand to my ear and feeling foolish. Smith's voice reached me.

"And Rosecrantz is owned by Spieler Interstellar!"

The tuba oom-pahed. I looked around the restaurant for Parry, hoping enough wax remained in my ears to protect the drums. I checked the beerhall attached to the restaurant, looking from face to face at the long tables of swaying bodies. Someone whooped, stood, poured beer on his neighbor's head. Neither one was Parry. Steins, held aloft, sloshed to the music. Groups of people, arms interlocked, rocked from side to side. A noon beerbust is something less than my ideal spot to talk business.

Someone shouted, "Ralph!" and staggered toward me, arms open. I retreated to the restaurant area, cornering the *maitre d'*. He listened, asking me to repeat several times to overcome the tuba. He pointed upstairs, holding up three fingers. Someone in the beerhall was on the table in *lederhosen*, slapping his

thighs and hopping. I nodded to the *maitre d'* and went upstairs.

The tuba diminished. I found room three and entered. Knocking would have been futile unless Parry's ear were to the other side of the door. Even then, the band was still loud enough to drown any response.

"Ah, Mr. Collins," said Parry, waving me into the room with his free hand. He finished biting a small drumstick, holding it at his mouth like a toothbrush. In person, he looked younger than on the phone. Mid-forties possibly.

I closed the door. Faintly, through the floor, I could hear the band, each oom-pah transmitted as vibration to my shoes. The room, heavily hung with burgundy drapes and displaying paintings of German stag hunts, contained only the table, heaped with fruit and silver serving dishes, wisps of steam above two of them, and two comfortable armchairs. Parry lowered the bone to his plate. He began daubing at a shiny area around his mouth with his napkin, tucked into his collar outside his cravat.

"Sit down, Mr. Collins. I'm glad you came."

I sat across from him. "I was in the area."

"Preparing to take up the reins, no doubt."

"Something like that."

He scooped mashed potatoes onto his plate, dimpled them with the silver gravy ladle and poured on brown gravy. "What would you like, Mr. Collins?"

"Whatever you recommend."

"Squab?"

"Fine."

He reached over to a phone next to the fruit bowl, punched one number and ordered squab.

"You don't mind," he asked, "if I continue?"

"Persevere," I said.

"My perseverance ought to be in the opposite direction." He patted his stomach and laughed. "But then"—he raised both eyebrows, hesitating—"men are weak." He scooped creamed peas and mushrooms onto his plate, watching them, eyes glistening. "We overindulge. We take what we do not want and want what we do not need." He returned the serving spoon, pausing to sip white wine from a long-stemmed glass with an apple-shaped bowl. "Oh, excuse me, Mr. Collins. Would you care for some wine?"

"Not just—"

"It's excellent. A Riesling from *SchlossHölle* in the Rhine Valley."

I held my index finger and thumb an inch apart. "Just a short snort." I had to say something to counterbalance such blatant wine snobbery.

He poured the wine, smiling. I sipped it.

"Like it?"

"It's good."

"Straight from hell."

"Pardon me?"

He pointed at the label on the wine bottle. "*Hölle*—it means hell. Odd thing to name a castle, don't you think?"

"Does it have a dungeon?"

He laughed, enjoying the idea. Of course hell had a dungeon. He ate peas. "Your predecessor was—how shall I say it—a humorless man."

"You knew Norton?"

"Quite well. We had lunch in this very room several times."

"What sort of business did you have with—"

"Ah, here's your squab."

A waiter wheeled in a shiny cart, parking it next to me. The band oom-pahed once as the door opened and closed. The waiter uncovered several trays, tilting each up for my approval and placing it on the table in front of me. I realized I was hungry. I glanced around the table for salt. The waiter watched me.

"May I help you, sir?"

"Salt?"

One eyebrow hopped up his forehead. He looked down his nose, or it seemed as if he was looking down his nose. "All seasoning is done in the kitchen, sir. If something is not to your taste, I will return it to the kitchen, but I must warn you, the chef himself will inquire about the difficulty."

"The chef."

"Yes, sir."

"Himself."

"Indeed."

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"It's just fine the way it is."

"Very good, sir. If you need anything else, simply call." He indicated the phone and withdrew. The band oom-pahed at his exit. Parry grinned.

"They're proud of their food, Mr. Collins."

I mumbled something that contrasted their fine palates with their tin ears and began eating. The squab, I had to admit, was excellent.

"You're rather young for a chief project engineer," said Parry, sitting back and straightening his napkin. The creamed peas and mushrooms, succulent, stifled my response. I nodded, eating.

"I had always considered Dr.

Norton quite young for the job, mid-forties. You could not be past forty, though you look younger."

"Twenty-eight," I said around the squab.

"Twenty-eight! I'm amazed!" He sounded amazed. Since he knew Dolores' name, I doubted he actually was amazed. "Congratulations! That *is* an achievement."

"Thanks." Whether mistaking me for a young forty was supposed to flatter my maturity, I didn't know. Whatever it was supposed to do, it misfired. Twenty-eight, forty, seventy-five—who the hell—pardon me, *Hölle*—cares? I sipped some wine. Parry's relaxed manner of getting to the point began to annoy me.

"You wanted to talk to me about business."

"In a way, yes."

"What way?"

"Mr. Collins, enjoy your food. Good food helps the disposition, sharpens the judgment—"

"Hardens the arteries. What did you want to talk to me about, Mr. Parry?"

"Loyalty."

If the food had been worse, I would have walked out. The man seemed intent on giving me some sort of sophomoric lecture on values. If I didn't watch it, he would trot out Kant and ruin my squab. "OK, shoot."

"Would you say you are loyal to your new employer?"

"Sure." I ate some potatoes and sipped some wine. Good wine. Dry. Nice. "They paid for me. They got me."

"If there were other opportunities to profit by your employment, would you accept them?"

"If this is some kind of bribe attempt—"

Parry made a show of denial, shaking his head vigorously from side to side and scowling. "No, no, Mr. Collins. Bribery is not my style."

"What's your style?"

"Aid. Let me ask you a hypothetical question. If you were in a position to gain certain technical information, information that would put your project months ahead of schedule, and, I might even say, add to its capabilities, would you accept it?"

"Depends."

"Exactly. It depends. Suppose further that the source of this information would have to be kept strictly secret, that you would therefore be given credit for originating the technical innovations it contained."

"Still depends. It could be bad information."

"It is good. I assure you. Norton—but perhaps I've said too much. In any case, would you, under those hypothetical conditions, accept the information?"

"What do I have to do for it?"

"Nothing." He beamed. "*That* is the beauty of it."

"Nothing?"

"Simply supply, in exchange, status information on your project." He held up his hand, warding off any potential protest. A tastelessly large diamond glittered on his little finger. "Nothing technical, Mr. Collins. Just the state of construction."

"Why don't you just charter a spacecraft and go look?"

"Mr. Collins, you know as well as I do that hardware, floating in space, gives little evidence of the state of construction. The erected shell of a building says only that tenants will move in soon, not when."

"Why do you want it?"

"Good question. Businessmen must keep apprised of the business opportunities available, the market. Accurate information is as valuable to assessing a market as intelligence is to a nation."

"Hypothetically, what kind of information would I be given?"

"My employer, Fenton Laser Products, is prepared to supply engineering data for the controlled-laser fusion reactor. That *was* Dr. Norton's choice for a power supply, wasn't it?"

"Beats me. Why should I care if you supply the information, or if Westinghouse supplies it or General Electric?"

"Ah, General Electric," said Parry, as if I had just revealed the name of his wife's lover. "They have a research facility near Livermore where you did some of your PhD work, don't they. I imagine Dr. Adamson was quite helpful."

"He was."

"Frankly, Mr. Collins, the progress we have made recently makes your dissertation look like a high-school term paper."

I quit eating. First he accuses me of being forty, then he calls me incompetent. His method of influencing people would not win friends.

"I'll think about it," I said.

"Good. Good. I hope our association will be profitable." He held out a silver bowl. "Nut?"

Smith was still retrospectively tapping Norton's phone when I got back, his face drawn. He saw me coming and hooked his thumb at the phone.

"Nothing. I've only learned one thing all morning."

"What's that?"

"Norton was a grade "A" son-of-a-bitch to just about everyone. How was lunch?"

"Parry tried to bribe me."

Smith chuckled. "How much?"

"Money?" I tried to sound insulted and incredulous simultaneously. "What do you take me for, Smith? Mere money. *Fame!*"

"Ah. And did you accept?"

I shrugged. "I'm too young for fame. Twenty-eight, much too young."

"Twenty-eight." He shook his head. "Too old."

"For what?"

"My granddaughter."

"I'm taken." I told him what happened at the *Vier Jahreszeiten.* He listened, chewing on an unlit cigar. From time to time a computer technician passed, glancing apprehensively at the cigar. Smith nodded, absorbing it all.

"OK," he said when I finished. "Let's get out of here."

"Where to?"

"Lunch. I'm starved." He rose and started across the computer room, gesturing with his cigar for me to follow. "We'll find someplace we can talk. *And* where I can smoke." He waved the cigar around at the room. "These *health* fanatics won't let me smoke. Besides, I want to tell you what you're going to do."

"You've got my marching orders cut already?"

"Yep."

"What am I going to do?"

"Be famous, buddy boy. You're going to take Parry up on his offer."

VI

Smith ate like a kid, wolfing down two hamburgers, demolishing a chocolate malt and rending an order of fries.

He talked between bites.

"Bad habit, I know." He ate. "Horrible to eat this way." He dunked a fry in catsup, apparently content to suffer the horror of it. "It's my granddaughter, Julia. Bad influence." The malt blurped in his hand. "I pick up all her bad habits."

"She smokes cigars?"

He ignored me, outlining his plan, eating, sipping. Parry was the only connection between Norton and Spieler Interstellar. In spite of Spieler's ultimate ownership of Fenton Laser Products, Parry might only want to sell laser products. It *was* his business. Smith wanted to know for sure. He wanted me to string Parry along.

"What do I do? Call Parry up and say, 'OK, make me famous'?"

Smith examined the innards of his second hamburger—lettuce, tomato, meat—all there. He added catsup and mustard, squirting each liberally. "He'll contact you."

"He will?"

"Sure." Smith bit into the hamburger and chewed, tucking the food into a pouch at the side of his mouth when he talked. "He contacted you before. He'll contact you again." Smith chewed up the pouched food, then dangled a fry over his tongue like a square worm, snapping at it. "Give him time. Make it look natural." He bit the fry.

"Speaking of how something looks—"

"Hm-m-m?" He looked at me, then at the fry. "Oh, sorry." He ate the fry.

"Julia?"

He nodded. In the same situation, caught with a dangling fry, I would have blushed. Smith just

kept talking. "When Parry contacts you, give him someting real to cut his teeth on, something you already know. That way we can check his information."

I thought about it. If Smith cleared everything with Mr. Merryweather, what could I lose? Fenton Laser made good equipment. If Parry was just a salesman, disguised as an industrial spy, I might even gain by the contact.

"What about Mr. Merryweather? Doesn't he have policies against trading with the enemy?"

"Don't worry about Horace."

I spent the rest of the weekend preparing to leave Tuesday morning. I had several quarrels with Dolores about leaving. She sulked, raged and pouted, mixing them sufficiently to keep me off guard. In mid-quarrel Sunday afternoon, the phone hummed. Dolores stomped out of the bedroom, where I was packing the second of three suitcases, to answer it. She returned grumbling.

"Who was it?"

"That *aw*ful man."

"Pornographic phone call?"

"No."

"Who was it?"

"That man you work for."

"Duff?"

"No."

"Smith?"

"No."

"Dolores, can we stop the guessing game?"

"Merryweather."

"Mr. Merryweather! What did he want?"

"I don't know. I hung up."

"You *what?*"

"Hung up."

Something like rage overcame me. I stammered about stupidity and irresponsibility and slammed the suitcase shut. Stuffed, it bounced open. She backed toward the bedroom door.

"Dolores, *stay* in here!"

"Bobby, don't get angry."

"I already *am* angry! When people call for me, I want to talk to them! I do not want you—"

"Bobby."

"Don't interrupt!"

"Bobby."

"What?"

"The phone's humming."

It was Mr. Merryweather, his tan face contrasting with the white collar of a tennis shirt. "Sorry to bother you on Sunday."

"That's quite all right, sir."

"I just wanted to tell you to give Smith your entire cooperation."

"I will, sir."

"I have complete faith in his abilities. Do you understand?"

"Yes, sir."

"Good. Do you play tennis, Mr. Collins?" The question took me off guard. He held up a racket.

"A little."

"We'll have to get together. Doubles perhaps. Miss Gomez seems a formidable opponent."

"She is."

He reached toward the screen to

hang up, paused and looked at me. "Or ping-pong." He hung up.

Monday, I was thumped, probed, sampled and scrutinized. Dr. Merril, the company physician, taped electrodes to everything but my toes, peering at the readouts with grave and profound impassivity. I expected to be wheeled into an operating room immediately. Emergency case. Born without a liver.

"Doctor," I said, anxious, trying to twist around on the diagnostic couch and see the readings.

"Lie down."

"But, Doctor—"

"If you do not lie down, young man," said Dr. Merril, slapping his palm with a rubber mallet, "I shall be forced to use anesthesia."

"Anesthesia," I said, looking at the hammer.

"Yes."

I lay down, staring at the ceiling. A brown stain, residue of a leaking roof, spread from one corner. "Doctor."

"What is it *now?*" snapped Dr. Merril, exasperated. I had not said more than a half-dozen words to him. "There are others waiting to be examined, in case you didn't know."

"People?"

"People. People exactly like yourself, people with concerns and cares and business to conduct, busy people, along with a smattering of *very* busy people. I am told that one of them will be in charge of our space station project, so you can see what a busy man *he* must be. I cannot stand around here all day explaining every little thing to you. These people *must* be examined. You *did* know we have a space station?"

I told him I had heard a rumor to that effect but had never seen it with my own eyes.

"Space stations, yes," he grunted. "But decent facilities for the medical personnel? No, definitely not. *Look* at that ceiling!"

I looked again.

I felt something cold swipe at the inside of my elbow. Dr. Merril and I inspected the area together.

"Ah, there it is."

I swallowed hard. "What?"

"A vein. Do I have to explain *ev-ery*thing?"

"Sorry." I lay back.

Something stabbed me. I looked at Dr. Merril. He held a large syringe of my blood.

"Aren't those," I asked, nodding at the syringe, "a little old-fashioned?"

He glared at me. "Are *you* a doctor?"

"Not a medical doctor."

He paused. "But you *are* a doctor?"

"Yes."

"What kind?"

I told him. He snorted, returning his attention to the syringe.

"The body," he said, "contrary to the rather crude analogies of the popular media, is not a machine. It is an organism. The tried and true

methods are most effective. Syringes are tried and true. Medicine is an art, nothing more, nothing less. These new machines"—he said the word with contempt—"can never replace the artist."

The Monet of medicine left with my blood sample. I wondered if he still treated ulcers with mercury. I lay there, thinking about my new job.

In spite of my initial indecision, I liked the challenge. I still had enough adolescent enthusiasm to enjoy the idea of space stations and matter transmitters. True, they were only machines, not Dr. Merril's organisms. Dr. Merril might find the artist in him inhibited by machines, but the artist in me, held at bay by the more disciplined engineer in me, wanted nothing more than to get his hands on those machines. If I was ever going to contribute anything more than the valves and swivels I had been designing at Standard Engineering, I would do it now. I remembered Mr. Merryweather, examining the model of Jenson's Gate. At sixty, his expression could have been described as adolescent enthusiasm.

Dr. Merril returned, glancing over a computer printout. At least he let some machines help him. I had imagined him running my blood tests with a large magnifying glass.

"Low blood sugar," he said.

"Is it serious?"

"Have you eaten yet today?"

"No."

"Hm-m-m," he said, giving the sound an amorphous sort of hopeless flavor.

"What does it mean?"

"It means," he said, scowling at me, "you haven't eaten today."

"That's *all?*"

"For now," he answered, coughing twice.

"But later, something might get me later."

"Young man, something gets *ev-ery*one later. See the nurse on your way out. She'll give you my report to return to personnel."

He coughed again. I thanked him and left. I imagined Smith, listening to that cough. *Unhealthy doctor—there's something to it.*

The rest of the day, I filled out forms, collected essentials for the trip and examined the library catalog, punching up items that applied to Jenson Gate physics or engineering. It required little augmentation. Somewhere in the process, my enthusiasm waned. Doubts surfaced. Just mastering the essentials of Norton's job was an imposing task. Going beyond the essentials to Norton's brand of engineering would take two or three engineers.

I talked briefly with Wilkins, the space station commander, by phone. *His* jaw actually was square, or close enough to pass for it. Age had muted its sharp line. His responsibilities included the station, its life-support system and person-

nel. Mine included the Gate, construction personnel and development. I also talked to the company geologist, the company astronomer and assorted company engineers and technicians. The engineers were the hardest to handle. With anyone else, I could postpone the always urgent consideration their problems deserved. The engineers insisted on being first in line. Testing me? Who knows? I demonstrated sound judgment. I begged off until I knew more.

After each call, I mentally retallied the amount of midnight oil I would need. The quantity was vast. Norton kept everything in his head, leaving nothing to fill mine. Until I got my feet on the ground—or off the ground, as Dolores correctly pointed out—I would be working in a vacuum in more ways than one.

Tuesday morning, I said goodbye to Dolores. She cried, hugging me.

"Bobby, don't go."

"Don't go! What am I supposed to do? Call them up and quit? Wouldn't *that* look nice."

"I just don't want you to leave."

I broke free and picked up my suitcases, starting for the door. Dolores blocked my exit, arms stretched across the doorway.

"Dolores, please."

"Promise you'll think of me."

"I'll think of you."

"Promise you won't play around with any of those flivvers up there."

"I promise. *Now* can I go, or do you want it in blood?"

"Kiss me first."

I tried, Dolores and I and the suitcases struggling.

I arrived at the Merryweather Building early, staggering up the entrance steps with my suitcases. Two suitcases are awkward—put down, open door, pick up, walk through, put down, close door—three are a juggling act. Duff, exiting the elevator, saw me coming. His scowl disappeared, replaced by something that was either a smile or a sneer.

"Going somewhere?"

I lowered the left-hand suitcase to the carpet and rested the hugged suitcase on top. My left arm felt several inches longer than my right. Slowly, I regained use of it. I glanced at the ceiling. "Up there."

"He's not in."

"I meant to the *Merryweather Enterprize.* Someone was supposed to drive me to the Gate."

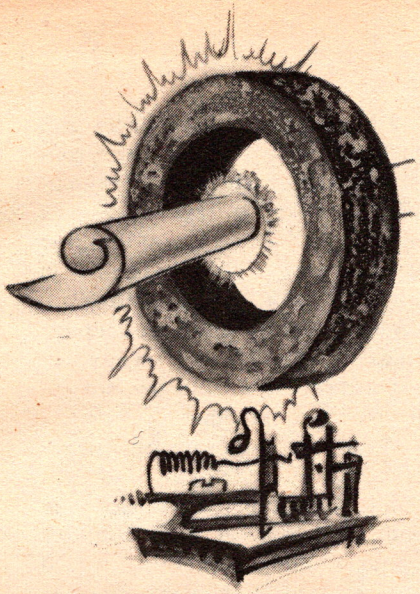
He looked at my bags. "Ballast?"

"Very funny. I *would* like to change underwear once in a while."

The receptionist, listening, looked up at me. Duff looked from suitcase to suitcase.

"Did you have three suitcases full of underwear at your last job, Mr. Collins?"

Clearly enjoying himself, he con-



tinued in this vein, speculating what sort of psychological fetish could account for a man wanting to change underwear so often. Unless Duff wore his clothes for three months straight, his preoccupation seemed misplaced. I began to suspect Duff knew some critical fact, one he liked keeping from me.

"I was under the impression," I interrupted, "correct me if I'm wrong—that the Earthside rotation is about three months."

"We don't recommend longer than three months," answered Duff, sharing his joke with the blond.

"It seems to me—and again I may be wrong—that one changes one's underwear at least once in three months."

"I should hope so," clucked Duff, coat pushed back, hands in his pockets, nodding vigorous agreement.

"Then what's so damned funny about three suitcases?"

"You don't plan to go home tonight like everyone else?"

"Home? I—"

With Norton's solution of the matter transmitter phase-shift, Duff explained—glowing with satisfaction at catching the child-engineer in what he evidently considered an Earth-shaking piece of technical ignorance—the solid electrical ground of the Jenson Gate was no longer necessary. Merryweather Enterprises used the standard first leg of any space journey, Earth to Moon by Jenson Gate, then a series of one hundred relay stations, orbiting the Sun at two-hundred-thousand-mile intervals, took over. I had been so intent on understanding the present problems of the Big Gate—most of them power supply problems—that I ignored anything considered solved. Phase-shift was solved. In one ear and out the other. The possibility of applying former solutions to different problems eluded me.

"Relay stations," I said, chagrined.

"Norton's idea."

"How long does it take?"

"About two minutes."

I will simply record that I felt foolish. I blushed. I looked at the blond. She, at least, had sympathy for me. Duff, busy enjoying himself, had none.

"Don't worry about it, Mr. Collins. They've only been in operation six months. Prior to that, we did have a three-month rotation policy."

"Thanks."

I left the suitcases with the receptionist. Duff drove me to the company Gate in Corona del Mar. I saw the focusing ring first, the great-grandson of the ring I had seen in Mr. Merryweather's office. Unlike commercial Gates, architecturally camouflaged, the company Gate showed bare bones, its eighty-foot tantalum focusing ring resting back on a framework of struts and supports, pointing skyward. It reminded me of a grossly constructed radio telescope. I say "pointing skyward" only because I knew it was. It could have as easily been focused at the core of the Earth. Physically "aiming" a Jenson Gate, though once thought essential, is superfluous. Electronically aiming it, the way "holes" are aimed in a transistor, is more accurate. Anything less would be like trying to hit an orbiting satellite with a slingshot. Chancy.

A blockhouse at the base of the focusing ring housed the integration equipment. A red Ferrari was parked by the door.

"Smith's here," said Duff. Any residual good humor he had from making the kid-engineer look foolish disappeared. "I'll drop you outside."

"Fine."

I watched the Gatekeeper suit Smith up. He checked wrist couplings and attached the air-conditioning hose. It trailed from a metal cart. The air-conditioning only worked with the helmet in place. Smith, his head microcephalic within the helmet coupling ring, watched intently, manipulating a dead cigar from one side of his mouth to the other.

"Is all this hardware necessary?" asked Smith.

The Gatekeeper, a chunky man with the reassuring air of a doctor asked whether something would hurt, glanced up, hunkering next to Smith's leg and checking his outsized boots. "Is insurance necessary?"

"Not particularly."

A bad analogy. To an actuarial table, Smith didn't exist.

"But nice to have."

"Yes."

"So's the suit."

I wondered about the odds on a faulty transmission. It happens occasionally, even on commercial jumps. Halfway between Los Angeles and New York, someone materializes in Des Moines. Defective transoceanic transmissions must be worse. Expecting the *Arc de Triomphe* and getting the Sargasso Sea could be annoying, especially with only a suitcase for a raft.

Smith cradled the helmet in the crook of his arm, lumbering around the suit room. "I feel like a zombi in this thing."

He looked more like a cross between the abominable snowman and the hunchback of Notre Dame. The white suit, arms and legs puffed, life-support backpack rising past his shoulders to ear level, gave him an imposing physique. Why Merryweather Enterprises kept old-style spacesuits was beyond me. Presumably new ones, light and efficient, would add nothing to the safety margin but expense. I could see Duff's hand in that decision.

While I was being suited up, Smith got a call. He lumbered into the adjoining room to take it, the metal air-conditioning cart following him. When he returned, I was almost ready, suited and sweating. The Gatekeeper connected me to the cart. Air began to circulate around my limbs. Smith's expression, pensively munching his cigar, attracted my attention.

"What's eating you?"

"Hm-m-m?" He stared at the floor, thinking.

"What's bothering you?"

"Norton," answered Smith, brow wrinkled.

"He bothers me, too."

"I can't figure it."

"He's turned up?"

"In a manner of speaking."

According to Duff, who relayed the information to Smith, pieces of Norton had been turning up for several hours, an arm here, a leg there.

Once the police got the idea, they put out an all points bulletin for stray limbs and organs. Someone had fed Norton's body through a spray-focused Jenson Gate, someone who knew very little about matter transmitters.

The idea had probably been to dematerialize Norton. Commercial Gates, stabilized by fail-safe feedback systems, seldom slip out of focus. Only manual override allows it. Even manual override never completely defocuses the field. Instead of spraying Norton over Los Angeles, a stream of subnuclear particles, it sprayed him in chunks and pieces.

"Norton gets around," I said.

"Yep. But—"

"But what?"

"We still haven't answered the big one."

"What big one?"

"Why? Alive, old Norton may have been the smartest engineer since Berzelius, but—"

"Berzelius was a chemist."

He ignored me, continuing. "Dead he's just a hunk of meat like anybody else." Smith mused, twirling the cigar in his puckered mouth. "Live genius." He looked at me. "Dead idiot?"

"What are you getting at?"

"All dead men are idiots, aren't they?"

"I suppose so."

"There's something to it, buddy boy."

"What?"

He grinned. "Who knows? With a joker like Norton, who knows?

But we're making progress."

"We are?"

The Gatekeeper led us to an elevator, the conditioning cart trailing. On the way up to the transfer surface, we received his memorized spiel.

"Both of you have used commercial Gates?"

We nodded.

"The only difference here is the suits. If there's a malfunction, don't panic. Press the red plate on your chest. It activates a homing beacon. You will be rescued within thirty-six hours. Do you understand?"

"The red plate." I looked at it. Square, red, not much to it.

The longer I thought about it, the more apprehensive I got. A three-thousand-mile jump to New York is one thing. A twenty-million-mile jump to an orbiting space station is something else. New York, at least, stands still, relatively speaking. The Gatekeeper mentioned only transmission interruption. He never said anything about spray-focus. I wondered about the maintenance requirements on privately-owned Gates. The thought of Norton, most of his organs still loose in Los Angeles, impinged. No red plates to be pushed after dematerialization. No red plates.

The elevator stopped, opening. A foot in front of us, the air shimmered. Through the wavering air, I could see the rooftops of Corona del Mar. The Gate framework was out of view. I felt as though I was about to walk the plank. Commercial Gates usually have a garden on the other side of the transmission surface. "Walk toward the fountain," the girl says. The fountain you reach is a duplicate at your destination. Most people find the illusion comforting. The Merryweather Gate, designed for corporate use only, lacked frills. No fountains, just air. Acrophobia set in.

"What if it shuts off?" I asked, trying to see over the edge.

"It never has," answered the Gatekeeper.

The *Merryweather Enterprize*, I tried to assure myself, in spite of orbiting the Sun near Mars, was closer than the ground. The station was only three steps away. I still felt dizzy.

"Helmets."

I hoisted my helmet into place. The Gatekeeper locked it onto the suit. When I was ready, he stepped around in front and signaled for me to go first.

"Smith?" I said into the helmet mike. My voice echoed around me.

"What is it, buddy boy?"

"Do you have your cigar in there?"

Above the elevator door, the green "Go" light blinked. The Gatekeeper thumped my helmet, nudging me toward the end of the platform. I took a deep breath and walked toward Corona del Mar.

TO BE CONTINUED

let there be light!

The search for "eyes in the back of your head" has led to "seeing" objects with your skin!

THOMAS A. EASTON

Remember Evelyn Cyril Gordon? No? How about Scar Gordon? Or maybe you recall Oscar Gordon better? By whatever name, the one his parents gave him, the one tacked on by his army buddies, or the one given him by that beautiful stranger, he was the hero of Heinlein's "Glory Road." His adventures made a fine tale, a fun tale, but without his "eyes behind"—one Rufo—and a certain hyperdimensional suitcase with all of Neiman-Marcus stuffed inside it, the story would have been proverbially nasty, brutish, and short, as well as vastly less entertaining. But was it Rufo or the bag of tricks that brought him through, successful in his quest, safe, and loved?

It wasn't the bag of tricks. That disappeared almost as soon as the trouble started. But Rufo? The "eyes behind"? He helped in other ways too, but that was the way that mattered. Heinlein effectively gave Oscar Gordon eyes in the back of his head in just the way that most of history's heroes have had them, in just the way that an army patrol has them—a rear guard.

Would you believe a single hero? A one-man patrol? Maybe, but you wouldn't want to be that man. He'd be too easily ambushed and killed. Now. But soon—five years? ten?—he may be possible. Scientists now are working on vision replacements for the blind that could be used to give a man a third eye.

Perhaps most reminiscent of science fiction is what might be called the "brain-jack" approach to the problem. Put simply, nerve cells are known to communicate by electrical impulses.* They can be activated by electrical stimuli and their own activity may be used to activate electrical sensors. And, accordingly, innumerable stories have been written in which the decision-making capability of the human brain is combined with the prodigious calculating capacity of the digital computer by using electrical stimulators and sensors to read information into and out of the brain. Some of those stories have actually used the notion of a plug, perhaps mounted in the forehead and looking rather like the socket of a radio tube, to link a computer directly to the cells of the brain. Others have mentioned induction fields such as might be set up between a set of small transformers implanted under the scalp and another set in a helmet. Still others have suggested tendrils or needles that would penetrate the scalp or skull and establish their connections with the nerve cells as the occasion demanded. These notions are science fiction.

A few scientists, however, are working along these lines. Not that they're trying to mate man and computer. So far they've done no more than apply small, square ar-

*Chemical impulses, actually. But they're always accompanied by electrical pulses so the difference needn't concern us.

rays of tiny electrodes to the surface of the visual cortex (that portion of the cerebrum which processes visual data) and provide patterned stimulation to the nerve cells there. In experiments on human beings they have been able to present letters of the alphabet and have their subjects report that they could actually "see" them. The images were not really clear—after all, the electrical stimuli were affecting vastly greater numbers of cells than are normally stimulated by similar images falling on the retina of the eye—and the sensation was not precisely that of vision, but a limited amount of information was getting through. The "brain-jack" works.

But not very well. Hook up that electrode array to a TV camera and maybe you could read. But you wouldn't be able to appreciate a *Playboy* nude. For that it takes another sort of approach. One that, although the information is still limited, can provide more visual information with less risk and fewer technological problems. A group of scientists in San Francisco has developed a system using a TV camera, some electronic circuitry, and a patch of skin on the belly or back or thigh, and though the system is being tested for use on blind (and blindfolded) subjects, there is a distinct possibility that it could be used to provide a "natural" sort of rear-view vision to a normally-sighted person.

Except for those researchers interested in implanting electrodes directly into the brain, most of the scientists working on the problem of vision replacement are focusing on ways of using the skin as a replacement or substitute for the retina. For instance, the Linville-Bliss Optacon uses photocells which, when passed over a line of print such as this, drive 144 small vibrators fastened to the fingertips and enable the blind to read. Another system uses a TV camera to drive an array of vibrators mounted on the forehead.

Even the Russians, though they approach the problem a little differently, think in terms of using the skin. At last report, they had a woman who could read with her naked fingertips, even through a sheet of glass. How she did it, they didn't know, but they were studying her and her odd talent with an eye toward training others to do the same. So far as I know, they have met with no great success.

The system I wish to discuss here is the one being developed and investigated by Professor Paul Bach-y-Rita and his colleagues at the Smith-Kettlewell Institute of Visual Science in San Francisco.* Their *tactile vision substitution system* (TVSS) uses an ordinary television camera to drive, through appropri-

*Dr. Bach-y-Rita's recent book, "Brain Mechanisms in Sensory Substitution," Academic Press, New York, 1972, is the source of much material in this article and I acknowledge his work gratefully.

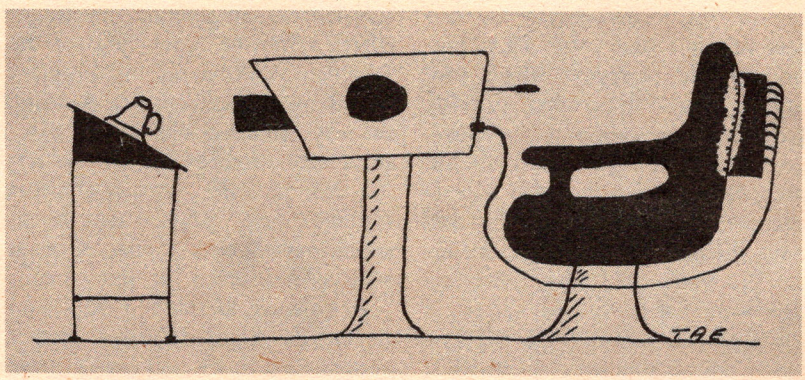


Figure 1. The first tactile vision substitution system consisted of (from right to left) a modified dentist's chair with an array of mechanical stimulators (vibrators) mounted in the back, a television camera which reduced its picture to a square array of points, each point of which corresponded to one vibrator, and a slanted display board. It weighed 400 pounds and was thus not portable, but it did show that such a sensory substitution system is feasible.

ate circuitry, an array of either vibrators or electrical stimulators which, because of the small size of the electric pulses they deliver and their high frequency (60 pulses per second), feel like vibrators. The circuitry reduces the TV image to a dot picture, rather like a black and white mosaic, in which each dot controls one stimulator in the array (*e.g.*, light-on, dark-off). The array, applied to an area of skin, actually permits a blind person to "see." Not color, and not yet very well, but well enough to read large letters on a wall, to locate a telephone or coffee cup, and to discover that a wife or husband doesn't really look as nice as the blind subject had thought.

The original version of the TVSS, built in the late 1960's, used a standard television camera and had an array of mechanical stimulators mounted in the back of a modified dentist's chair, as shown in Figure 1. Thus, when the subject sat down in the chair and leaned back, the vibrators were in position to impress their "image" upon his skin. The system was not portable; it weighed 400 pounds and was quite bulky; but the movements of the camera could be controlled by the subject.

Later models, however, were made portable, the first such consisting of a stimulator array on the belly and a one-pound camera slung over one shoulder like a handbag, and connected by fiber optics to a "look-out" station be-

side the eye. The latest differs from this principally in that the TV camera weighs only six grams and is mounted on a glasses frame, thus permitting a blind person to attain, in some respects, nearly normal vision. The stimulus array delivers small electrical pulses to the skin and, since the electrodes are much smaller than the vibrators, it is much lighter than the earliest mechanical arrays.

The exact nature of the apparatus involved, though, is not as important as the nature of the phenomena observed and the "visual" results obtained. The first TVSS, heavy, bulky, and with only an 8 x 8 array of stimulators, proved that the approach was workable, that blind persons could use senses other than their ears and hands to obtain intelligible information about the world around them. Later models showed just how much like vision the tactile substitution can be.

Most of the subjects who have cooperated in the development and study of the TVSS have been the so-called early blind, that is, people who have been blind from or nearly from birth. (Visually-guided behavior does not develop in man until about two months after birth, so it is not possible to diagnose blindness before then.) These persons have had no prior experience of vision, but with some training on the TVSS, all became "visually" sophisticated enough to be susceptible to the visual illusions.

In fact, one such person was using the set-up of Figure 1 (the slanted board is used to allow the demonstration and use of certain distance cues, such as the height of an object on the board) when the board unexpectedly fell forward onto the camera. Several days later, the experimenter recreated the incident by operating the camera's zoom lever without warning the subject. The subject threw up his arms and tried to leap backward, away from the falling "wall," even though the "visual" information upon which he was acting was being impressed upon the skin of his back. Not only did he learn the first time what a "looming" stimulus meant, but he localized it correctly in space, precisely as if he had functional eyes.

This is all the more startling when we consider the nature of the stimulus: an array of point stimuli, 20 x 20 in the latest models, only some of which are activated by the light reflected from an object and entering the camera. Figure 2 shows, schematically, what a beer stein would look like with this system. The figure is most accurate as a representation of the earlier mechanical stimulation—the dots of the image are black and white and the corresponding vibrators are either on or off. Gray-scale information is only now becoming available in those models which use electrical stimuli.

Obviously, a 400-point array cannot convey much information, but because the subject can move the camera, either by its controls as in Figure 1, or by moving his head as when the camera is mounted in the glasses, he can carry out what astronomers call occlusion studies and get a very accurate idea of what the actual contours of an object are.

As presently designed, the system is cyclopean, or monocular, and it has a narrow (two-to-ten degrees) field of view in order to let as much detail as possible reach the dot picture of the array. But as long as the subject can control the movements of the camera, he can not only "see" the object, but, as indicated above, he can "see" it as located in front of him, even though the signals that reach his brain are originating on the skin of his back. He senses it not as a pattern of vibration, but as an externally localized object, just as sighted persons do those objects they sense through their eyes.

It helps that the subject can correlate changes in the stimulus pattern with his own motor output—if he makes a motion in connection with an object he knows is there, then stimulus changes become identified with the object. It is in just this way that infants may learn to identify external objects as external by correlating changes in appearance with eye and head movements.

But this similarity only disguises the nature of the problem to which the TVSS seems to be a solution. Sensory substitution depends on the ability of one sensory system to assume the functions of another, where "system" means the peripheral receptors, the nerves linking them to the spinal cord and/or the brain, and the central nervous system itself. The various systems differ from each other most obviously in the nature of their receptors, though there are also important differences in the neural equipment that processes the data received and passed on by them.

While no two sensory systems may do the same thing, one may be made to serve the same purposes as another. It is quite possible to transform stimuli appropriate to one receptor into stimuli appropriate to another, and that is just what the TVSS does: the TV camera absorbs light and acts as a transducer to change that stimulus to the electrical or vibratory stimulus appropriate to skin receptors.

Now, most people are surprised when they are told that the skin can be made to serve as an eye. "How?" they ask. "After all, the eye is very small and covered with millions of very sensitive light receptors and the skin is big and its receptors don't seem very sensitive at all." If they know a little more, they point out that most areas of the skin are not sensitive enough to tell the difference between one and

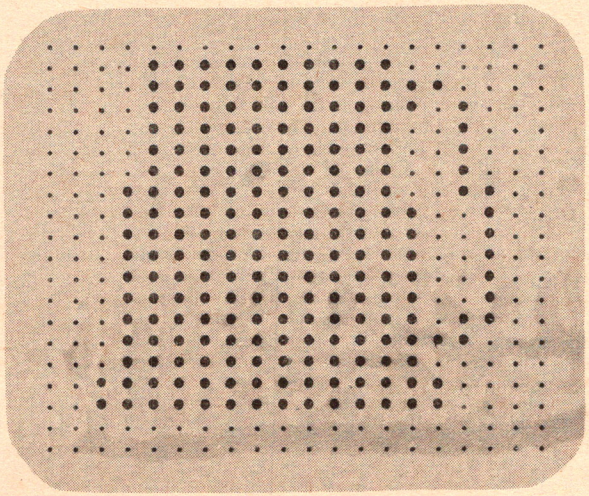


Figure 2.
A pictorial representation of a TVSS image.
The large black dots are those activated by the light entering the TV camera and are felt by the subject as vibrating points.

two pinpricks unless they are relatively far apart. But the sensitivity is greater than it seems, and the skin's reaction to pinpricks is not entirely pertinent: patterns can be sensed, and a good example is the way your "insensitive" back responds to the texture of a shirt. We don't use it, but the potential is there, and the skin of a person with a sensory handicap such as blindness often becomes almost excruciatingly sensitive—the blind are sometimes said to be able to "feel" walls and other obstacles either as light or as sound.

The average individual has about two square meters of skin on his body, 90 percent of it hairy and all of it loaded, more or less heavily, depending on its location, with receptors for touch, heat, cold, and several other stimuli. The scientists don't yet know which ones transfer the information provided by the TVSS to the brain, but they do know that one or more does the job, and that, because of the rapidly changing nature of the information provided by the TVSS, it must be a receptor that adapts rapidly to changes in the stimulus to which it responds. But even so, the nature of the skin and its receptors acts to provide some preliminary processing of the TVSS data—when vibratory stimuli are used, the traveling waves set up in the skin by the vibration act to stimulate neighboring receptors and to blur the "image." Electrical stimuli, which spread much less when the elec-

trodes are properly designed, provide a much crisper, clearer picture and hence permit more detail to be seen and more points to be usefully used in the stimulus array. Furthermore, thanks to such characteristics of the skin receptors and their nerves as lateral inhibition and varying adaptation times, the TVSS information is filtered and funneled so that the data reaching the central nervous system for analysis and "perception" are in some ways simplified.

Despite this simplification, however, the scientists responsible for the TVSS have not tried to change the characteristics of their system to reflect it and, perhaps, make it possible for the nervous system to extract more use from the data they can provide the skin. The traditional approaches to the problem of sensory substitution (such as Braille) did attempt to do something like it, producing systems which provided only data considered "meaningful" by their designers, but such approaches were not very successful. Braille, for instance, is a highly artificial construction that not only requires learning a whole new code and relies on specially prepared materials, but discards all of the nuances of typography and leaves its user isolated from handwriting, billboards, and most printed material.

Any attempt to constrain the inputs leads to a loss of usefulness; in effect, it deprives the brain of any chance to examine a whole pattern and extract its own meaning; it removes the context of a stimulus which is essential to any understanding of its significance. The designers of the TVSS have instead focused on providing as much information as possible to the brain, though it has been found that if the image of an object is processed so that only the edges appear in the dot picture the ease of recognition is increased. The only constraints on the data provided by the TVSS are those constraints inherent in the system itself, and those are severe enough. It has been said that the limitations of the system are more attributable to the lack of information in the dot picture than to any overloading of the data-handling capacities of the skin.

Nevertheless, a blind person must be taught to use the TVSS. He has to learn the visual concepts and strategies that sighted persons learn so far back in infancy that they have completely forgotten that they once did not know them. He must be taught, through the use of pedagogical aids like the slanted demonstration board of Figure 1, such cues to distance, shape, and relationship as overlap, height in a field of view, shadows, and distortion of shape with rotation. It was this last lesson, pointing out that squares and circles are never seen as such by sighted persons unless held, or approached,

perpendicularly to the line of vision, that caused one girl to exclaim, "My, you sighted people certainly live in a distorted world!" To her, the shapes of things were invariant because they always felt the same to her exploring fingers, but within a few hours she learned the principle of "shape constancy" that rules our learned belief that shapes never change.

Blind persons who are given sight surgically often become so confused by the chaotic, kaleidoscopic world of shape and color that they actually *refuse* to see. The shock of the unfamiliar is too threatening and they dare to use their eyes only for such customary things as reading, for there the differences are not so great. Most of the subjects using the TVSS, however, eventually learn to "see" well enough to recognize faces and objects, to use the perspective cues, and, with the portable system, to find their way around the laboratory. The difference may be because of the simplicity of the scenes to which they were exposed in training. The novelty of the input may never have been so overpowering.

It is known that the nervous system adapts to the demands made upon it by the environment. Studies of rats raised in enriched environments—meaning that their scenery and possible activities were more varied than for the average rat—have shown increased brain weights and increased amounts of the substances involved in synaptic transmission, suggesting an increase in the ability of the brain to process information, while an environmentally deprived rat shows decreases in the same items. Kittens raised with their eyes covered by prisms which distort the world show concomitant changes in their visual cortex, changes in the "circuitry" of the brain that render it able to compensate for the distortion. Persons who have been blind or deaf from birth show, on autopsy, a shriveling or withering of those parts of the brain that serve those senses. The brain's capacity for such changes, however, is not permanent; it is only during the so-called formative stages of life that it responds so obviously to alterations in the sensory environment. Once infancy or early childhood is past, blindness or environmental enrichment results in only minor changes, though these minor changes are large enough that a person blind from birth may, if given sight, regain a large amount of function.

Peripheral changes occur too. Certain diseases (*e.g.*, psoriasis and leprosy) are associated with proliferation or destruction of the nerve endings in the skin; amputation is accompanied by atrophy of those parts of the spinal cord that served the missing limb; but such changes are much less important than the central ones listed in the previous

paragraph. When the environment insists that more data be handled by a sensory system or that it be handled more efficiently, the nervous system responds by altering its central portions. The investigators of the TVSS have been able so far to find no changes in the peripheral nervous systems of their subjects.

What changes? The cells of the normal visual cortex are known to respond to tactile as well as visual stimuli, but if the visual cortex is withered or atrophied from disuse it can not be expected to serve as the central processor for TVSS "visual" data, certainly not without showing some sign of its shortcomings. And that part of the brain which does act as the central processor for information from the skin is not normally geared to handling the complexities of visual data, though the evidence suggests that it has no difficulty in handling the TVSS data.

Do the peripheral nerves and spinal cord indeed change, adapt to reduce the complexity of the data to a point where the normal "tactile" cortex can handle it? It has been found that once a blind person has learned his visual strategies and is able to use the TVSS successfully with the stimulus array applied to one area of the skin, such as the back, the array can be moved to another site, such as the belly or thigh, with no loss of the ability to "see." The transfer of the learning to the new site is immediate and includes the ability to localize objects correctly in space. There is no confusion because of the change in the site of the input. This transferability of TVSS "vision" suggests that the adaptation probably occurs at much higher levels than the spinal cord. It probably does not involve the atrophied visual cortex, but rather a functional hypertrophy, necessarily limited in the case of the older subjects on whom the system has been tested, of the tactile cortex to allow it to do the job.

Thus, what is known of the adaptability of the nervous system suggests that, once a blind person has used the TVSS long enough, his brain will adapt to allow him to extract nearly as much information from the tactile dot picture as the normal eye can. It further suggests that the younger the subject, the more thorough this adaptation will be.

The success to date of the TVSS allows us to speculate that there will soon be such a thing as a visual prosthesis. Ultimately, this may take the form of a TV camera shaped and colored like an eyeball, installed as a replacement for the natural eyeball, hooked up to the natural eye muscles for motor control, and linked by subcutaneous wires to a stimulus array embedded in the tissues underlying the skin of the belly. A blind person would then neither look nor behave any differently from his sighted neigh-

bor. He would not be blind.

The only significant drawbacks that remain, the basic technical problems* having already been solved, are the psychological factors. Because of the lack of emotional associations with visual perceptions and because of preconceptions based on their other senses, the blind subjects who have worked with the TVSS have not always found "vision" pleasant. As mentioned before, when they have examined the faces of people close to them, they have not always considered them as attractive as they had previously thought. Men who examined *Playboy* nudes were not aroused. A woman who had just married could only be motivated to use the TVSS to "see" by using as practice scenes the household implements with which she was then involved. But these difficulties are due only to the past experience of the subjects. They would not arise if an infant, as soon as he was diagnosed as blind, could be fitted with a visual prosthesis. He would then develop the same emotional associations with and reliance on visual stimuli as sighted persons.

As exciting as that first commercial artificial eye will be, though, there are other possible applications of the basic idea of an artificial "tactile sense." The same researchers are testing it as a way of giving hearing to the deaf: a single vibrator modulated by the output of a microphone is an accurate enough reflection of a voice so that an otherwise deaf person can actually tell when a new voice joins a conversation. Other researchers have built a model of the basilar membrane, that elongated trapezoidal structure whose vibrations stimulate the nerve endings with which we hear. The model, like the biological original, responds to sound in such a way that only one small portion of its length resonates to a single frequency. In life, the nerve endings attached to that area respond and the mass of the separate responses to the various component frequencies of a sound are integrated by the brain to produce our aural perception. To use the model, a person, deaf or otherwise, lays his arm along it, thus allowing the receptors in his skin to act like those in his ear. The difficulty is that the tactile cortex does not seem capable of integrating this frequency break-down data into anything intelligible.

But getting back to vision, the TVSS studies have not only shown that blind persons may be made to "see" in a very real sense, but that a blindfolded sighted person may also use the equipment successfully. This raises the possibility that sensory augmentation may become as important an application as sensory substitution. The artificial eye could be used to provide military scouts,

*And technological. The Optacon mentioned on page 65 is now being produced and sold by Telesensory Systems, Inc.

pilots, elementary school teachers, and even heroes with eyes in the backs of their heads. It could provide vertical vision (an eye for the top of the head), night vision, and remote vision. It could allow a pilot to receive altimeter and radar displays directly through the seat of his pants (and that's no metaphor here), thus releasing his eyes from instrument monitoring tasks to attend to more important things.

The basic idea of the TVSS could even be used to link a man intimately into such complex systems as computers. We don't know how many "tactile senses" a man might be able to use at once without confusion, but since we do know that he can watch TV or read while listening to music, scratching several different itches, and objecting to the prickliness of his woolen pants, we might guess at three to six, surely a large enough number to allow a man to do a much better job of keeping up with the flow of data a computer can provide.

Picture, if you will, some complex system such as a traffic control computer or a spacecraft. Ordinarily it would be controlled by its operator through buttons, levers, and switches according to the information furnished him by visual (TV screens, dials, lights, and so forth) and aural (bells, alarms, and instructions) readouts. If we replace the operator's chair with another whose sides, arms, seat, and back all contain TVSS stimulus arrays, each one providing some "visual" or symbolic display, we can replace some of those more usual signals with tactile ones . . . and add some.

But all that information is not necessarily useful. It does no good to double or triple the amount of data being fed to the operator of the system if he cannot coordinate it in his mind and act upon it. If we assume (as we must for the present) that he can coordinate it, we are left with the question of whether he can operate the additional controls the additional data make possible. One solution to that problem is the science fiction notion of plugging a man's brain directly into the computer, but that involves expensive and dangerous surgery, even supposing that a way is ever found to hook into the nerve pathways of the brain in such a way as to permit the input of information and the output of commands.

To make that information useful, we need a method of commanding the system as simple and comprehensive as the TVSS inputs. Since there now exist methods of controlling artificial arms and legs by the bioelectric pulses generated by very slight, willed muscle contractions, we might dare to speculate that the "brain-jack" notion will someday be realized by a combination of TVSS inputs with bioelectric monitoring techniques that would make every muscle twitch a command to the system. ■

LEO SUMMERS

And the weak
shall inherit the stars?

SYDNEY J. VAN SCYOC

ABERRANT

It was past planet-noon when the hoverscooter lofted from the green hollow where the scoutcraft nested and moved buoyantly across the landscape, maintaining a twelve-inch air cushion between the boots of its two passengers and the black soil of this world. In their heavy shieldsuits and clearplas headbubbles, the two men for once achieved a near-uniformity of detail and proportion. It was not a uniformity that would bear close inspection.

Render guided the hoverscooter around a giant stalk that resembled a towering broccoli. Bright blooms spilled violently from the top of its head. At ground level, vines fought for space. Mingled with clusters of dull green leaves were others of such high metallic gloss that they mirrored sunlight in painful flashes. Springing through the viny carpet were waist-high plants with large, heavily-bearded leaves. Intermingled were many species that would have looked at home on Earth in any uncultivated field.

Yute Vantz took no bucolic pleasure from the tangle of leaf, stalk and vine. He was too aware of his people in orbit above, anxious to learn if they could claim this world or if they must pass deeper into the void to establish their place.

Yute glanced at Render. Like any spacebound Normal, Render had come aboard at Earthport already shieldsuited, and he had never shed or changed the suit over the months of the journey. Nor had he ever removed the headbubble. The air he breathed was scrupulously filtered before entering his tank. Technology had extended itself fully to protect his chaste genetic material from the warping rays and mutagenic gases that lay beyond Earth's solar system.

Technology had extended itself less enthusiastically in the direction of comfort. Yute squirmed inside the suit he had pulled on ten minutes ago. Render's terseness, his barely leashed anger—Yute had assumed these spoke his distaste for the genetic aberrants he ferried. But now that Yute tasted shieldsuiting, he wondered if Render's spleen didn't stem at least partially from simple physical discomfort.

They moved across the land. A sporadic stand of corn appeared, perverted from its original form after two centuries of radiation from an alien sun. Some stalks were willowy, others massively thick. Some bore red-veined leaves that ended in dark thorns. Others exploded with vivid purple blossoms.

"Looks like the edge of the cultivated area," Yute observed.

"Obviously."

The scooter swung easily through the disordered corn, then elevated to top a heavy clump of vines. Yute, turning, caught sight of a protrusion from the dull-leafed mass. "Wait—back there."

Render swung his head, then

swung the scooter. He settled it beside the clump.

Tearing at twining stems, they uncovered a farm wagon. The bed, made of native material, was crumbling. But the wheels were heavy plastic, intact. "Part of the original shipment," Render decided, studying the digits inside the plastic rim.

Yute stood, cast his eyes over the field. They were nearing New Salem now, nearing the answers they had come for. This planet lay nearer Earth than any other inhabitable planet. Yute's people wanted this world. Yute wanted it for them. But there had been a settlement of humans here before. It had not survived.

Yute's head whipped as he caught distant movement. Before he could alert Render, the barely glimpsed shape disappeared. Yute frowned, trying to reconstruct the brief image.

It had looked very much like a dog.

He turned back to Render. The other man was already reboarding the scooter. Shrugging, Yute took his own seat.

A few minutes later they stood on the perimeter of New Salem. Constructed, like the farm wagon, half of native materials, half of Earth durables, the community was a vine-choked mausoleum now. It was ninety years since its death had been discovered by recon ship. The ship had not landed to investigate further.

"Tell you anything?" Render challenged.

"It will," Yute said, moving forward.

The vines that buried the dead village tangled at their feet, tripping them and hiding what they had come to inspect—the remains of the previous human inhabitants of this world. They dug, Render grimly, Yute with purpose.

It was late afternoon before they rested. Then they sat on a plastic slab before a half-collapsed structure. Behind them, within the structure, were the skeletons of a dozen humans. Before them, in the brief stretch of excavated street, were the skeletons of two dozen more.

Sighing, Yute stood to shed his shieldsuit and headbubble. The need to protect himself against possible infection was clearly past. "They all died of violence," he mused, flexing his spider-long limbs, stretching his abbreviated torso. His head was heavy and malformed. "Every one of them." Crushed skulls, shattered ribcages, smashed spines—the inhabitants of New Salem had killed each other with pitchfork, club, ax and gun. Their weapons remained to tell the story.

Render grunted.

"And they weren't fighting over food." They had discovered extensive stocks of preserved food nearby. Yute's mind labored to comprehend the carnage. This com-

munity, after all, had been founded by pacifists, people who had left Earth in a body, all major races of man represented, to protest the violence rampant there. They had come here to found a community that would stand monument to peace and brotherhood.

The monument, obviously, had toppled.

"And we don't know any more than we did before we pulled back the vines," Yute said.

Render's dark eyes fired. "We know there was a fantastic mutation rate here. You saw that yourself."

Yute frowned. Marked skeletal changes had been apparent in many of the remains, pointing to a similarly high percentage of mutations that could not be detected now, with muscle and flesh disintegrated.

"There's going to be a high mutation rate on any world we settle," Yute pointed out. "Would that keep you on Earth if you were an Abby?"

Render's brows contracted. "I see no point in discussing that."

Yute shrugged. "Maybe we should get back to the scout. Tomorrow we can return with tools."

Render faced him. "Vantz, with the proven mutation rate here, it would be more to the point to return to the ship and head for the next inhabitable planet out."

"Oh? What's the proven mutation rate on that one?"

"It hasn't been formally assessed."

Yute shook his head. "Unless you can guarantee a lower rate—no. Not until we prove this place uninhabitable." He studied the Normal's face. "There isn't one of my people who doesn't dream that his line will breed back to normal in a matter of generations and return to Earth. We want to be close enough to make that practical."

Render's face tightened. "That's nonsense. Your genes are riddled with lethals and sublethals. When you reproduce, you'll be lucky to salvage one liveborn out of three. And that third isn't going to be normal, just more fit than the other two to survive to adulthood."

"That's more offspring than the Abbies who remain Earthside will salvage."

Render's eyes darkened. "You blame us for putting a stop to the breeding? How long could the human race retain its identity if you people were allowed to keep disseminating your kind into the population?"

Yute frowned, refusing to anger. Two hundred and forty years ago, his ancestor had carried the flag of humanity to new worlds—and had returned to Earth with the mark of space upon his genes. Now his descendants and the descendants of all others like him had been renounced by the human race, their right to continue reproducing precluded by law.

"What would you do, Render? Choose a deadend life on Earth? Or come out here where you could hope to leave a heritage?"

Render's reply was a bone-whitening of his features. Without word, he rose and stalked away.

Yute stared after him, perplexed. He knew well the odd side of Normals, their fears, their confusions, their hatreds when faced with the Aberrant. But Render's reaction held a different quality, a bitter anger Yute found it difficult to assay.

Shrugging, Yute settled back to the slab. The village of New Salem lay deathly still at his feet. Tomorrow they would return with tools. But he knew already what they would find under the remaining tangle of vine.

More of the same. Death by violence.

He rubbed his forehead. He had seen all the material on New Salem. He had read the proclamation of purpose drawn up by the original settlers. He had glanced over the inventory of materials, supplies, stocks and seeds shipped with them.

He had browsed through the journal of Timmer Janssen, published Earthside on the tenth anniversary of the founding of New Salem. It was a self-consciously poetic account of the first years of this community. It was a self-righteous document too, dwelling long on the contrast between the bucolic harmony here and the strife and competition that prevailed on Earth.

At first, passing recon ships reported on the colony with fair regularity. Then came a thirty year hiatus.

The last ship to find New Salem alive was captained by Janro LaFarge. Yute had read ship's log passages pertaining to LaFarge's visit. The captain was able to spend just three hours on-planet, but his account glowed with the hospitality of the Salemites, with their health, beauty and prosperity, with the rustic charms of their setting—even with the intelligence and friendliness of the purebred Collies they raised. He left the world proud both of the human race and of his own people, whom he found markedly predominant in the community.

Yute sat for an hour on the slab, trying to resurrect phantoms. They remained stubbornly inert.

Finally he returned to the scooter. Render waited at the controls, stiff and silent. Yute boarded, and Render pulled the scooter into the air.

The scoutcraft, despite its size, had been designed to provide complete privacy for its occupants. Yute and Render took their evening meal separately. Afterward, Yute lay on his bunk, eyes closed.

The questions in his mind would not be lulled. Soon Yute was outside the craft, carrylamp in hand.

He stood for a while in shadow, senses alert. Then he flicked on his lamp. Mirror-bright leaves caught his light and shafted it back at him. As he stepped from the hollow and passed under a towering broccoli tree, strong fragrance seared his nostrils and eyes.

Other night-bloomers were more gentle. Their perfume was pervasive, evocative. Vines rustled with evening gossip. Overhead, stars hung blue-white and brilliant. Yute walked under them. On Earth, the lights and vapors of civilization muffled the night sky. Human bustle made each man small. But Yute stepped across this world, under his regal canopy of galaxies, with elation, master of time, master of place.

Reaching a second hollow, he sat and extinguished his light. Then he listened. There were animals on this world, he knew, several distinct species of them. Small animals, shy animals. They carried their eyes on waving stalks. Timmer Janssen had described them in his journal.

The eyes he found peering at him from the shadow of a broccoli tree did not wave on stalks. They hung steady and red thigh-high from the ground. They were spaced like the eyes of a large dog.

There were three pairs of them.

Five minutes passed. Slowly Yute brought the carrylamp from his side and held it between his knees. He flicked it on.

The eyes were gone in a flurry. Yute fanned his light, trying to catch the fleeing animals in the beam.

Without success.

He doused the light again and thought. If there were dogs, survivors of New Salem, they were wild dogs now. And he was not armed.

Except with a carrylamp. It would do—for tonight.

He reached the edge of New Salem as the first golden moon rose in the south. He sent the beam of his lamp down vine-choked lanes. But he felt no desire to walk death alley tonight. Instead he turned back toward the scoutcraft.

He found Render standing in the dark. "Enjoying the night?"

"What do you think?"

His tone startled Yute. Then, studying Render's posture, he understood the bitterness. Render didn't stand with the breeze of evening on his cheek, with the caress of night in his hair. Render stood in a stagnant shieldsuit, his view of the stars filtered through clearplas.

Render wasn't here at all. Render was still shut into a stale closet on Earth. Only the unfeeling skin of his suit was exposed to the sensuous ceremonies of an alien night.

"There's something out there," Render said darkly.

"Eyes?"

"Yes. In pairs."

"How many pairs?"

"First one, then several more.

They pulled back when they heard you coming."

"I saw them earlier. I think they may be dogs."

Render's interest was engaged. "Collies? The ones LaFarge mentioned?"

"Possibly—many times removed." And probably grotesqueries by LaFarge's standards by now. LaFarge's family had bred Collies for show. "Maybe we'll sight them tomorrow."

Render's interest dulled. "Maybe." The word held bitterness beyond the content of the conversation.

The next day they returned to New Salem with tools and implements.

By late afternoon they knew just as much as they had known twenty-four hours before. The settlers had killed each other with very conventional weapons and very brutal methods. There were nearly three hundred skeletons to tell that tale.

But why had the tale been spun? General madness? Civil war?

Yute brooded, leaning on the handle of a shovel. They had all the wrong answers. They knew how, but they didn't know why. Could he call his people down here with the why obscure?

Render's face was grim. "It's clear what happened. It would have come to the same thing on Earth if we hadn't taken measures."

"Oh?"

"By loose estimate, a full fifty percent of the population was Abby. They were threatening to take over and the Normals fought it. All the way."

Yute's eyebrows rose. "I understand the community operated on democratic principles. One individual—one vote."

"That's the point," Render countered coldly. "A few more years of uncontrolled breeding and the Aberrants would have outnumbered the Normals—and seized control."

Yute sighed, exasperated. Was it beyond Render's understanding that the star-damaged cherished no desire to dominate human society? That they merely wanted to function within it, like anyone else? "LaFarge didn't mention rivalry of that nature here," he pointed out.

"LaFarge didn't mention the mutant problem at all. He only spent three hours on-world. Obviously the mutants were kept out of sight."

Yute frowned. "Kept—?" But Render was right. LaFarge hadn't mentioned the presence of Abbies. Instead he had dwelled glowingly on the health and beauty of the New Salemites who had entertained him.

"I don't see the point of pursuing this further," Render said, recognizing Yute's uncertainty. "I'm making a formal recommendation that your party continue on to the next planet. I will record that recom-

mendation in the ship's log as soon as I get back to the scoutcraft."

Yute studied the Normal's face. Slowly he shook his head. "I refuse to say yes or no to this place yet. I still need time."

"To dig more skeletons?"

"To think more thoughts."

"Think them then." Render gathered his tools and lofted the scooter back toward the scoutcraft, leaving Yute afoot.

Yute walked down the half-cleared streets of New Salem. He found his seat of the day before. Sat.

Thought. There had to be some way to clarify the events that had led to the death of New Salem.

Gradually he became aware of scrutiny. He raised his head.

A single dog stood fifty yards away, a Collie. Its generous chestnut and white coat gleamed. Its nose was long and typey. It stood with ears pricked, head erect, meeting his gaze.

He stared, aware that his jaw sagged. When he had fully digested the startling sight, he buckled his jaw back up into place. Slowly he extended his hand.

The dog did not approach.

He clucked. Chirped. Coaxed softly.

The dog lowered its head warily.

Carefully Yute stood.

The dog ran.

Yute stared after it. How had a Collie managed to survive here? No, not how had it survived—there was small game, after all. There had been poultry, sheep and rabbits in addition to the native species. Instead, how had a Collie managed to retain the integrity of its breed? After ninety years or more?

If the New Salemites had kept nothing *but* purebred Collies, perhaps . . .

And if the dogs had been far more resistant to mutation than their masters . . .

But the original settlers had brought many breeds. He knew that. They had shipped working dogs of all descriptions including crossbreeds and mongrels.

He returned to the scoutcraft thoughtfully. That night he remained in his cabin. When he slept, vivid images floated up to trouble him. Healthy, handsome settlers romped before him, magnificent dogs at their heels. But the settlers' faces were blurred.

He woke with LaFarge's closing comment in mind. Janro LaFarge had left this planet proud both of the human race and of his own people, whom he had found markedly predominant in the population of New Salem.

And who had LaFarge's people been?

Yute was at the commset by dawn. He touched the controls.

"*Agnelles* bridge," a wispy voice informed him.

Sweet Molly, dark-eyed maid

whose perspiration left fine crystals of sugar on her skin. "This is Yute. I need information. You'll have to flash back to Earth for it."

Her voice woke. "I will—right away."

"Good. I want to know two things: the nationality and racial background of Captain Janro LaFarge and the national and racial breakdown of the original New Salem settling party, if you can get it."

"I'll call you when I have the information. We're all waiting to hear what you've found."

"Keep waiting," he told her. "I won't keep the news to myself when I decide."

It was mid-morning when he had the answers. "Captain LaFarge was Black American, classified as indigo-dark. The original settling party was 76 percent North American by nationality, 12 percent West European Combine, 9 percent Continental Asian Alliance, 3 percent Eastern European Republic. The racial breakdown of the Americans was—"

"No United Africans?" Yute interrupted.

"None listed."

"OK, go ahead with the North American breakdown."

She did: "67 percent Caucasoid American, 12 percent Latin American, 10 percent Oriental American, 6 percent Black American, 3 percent—"

"That's what I wanted. Thanks."

He settled back in the padded seat of the cockpit, his forehead creasing. LaFarge had found his own people predominant in the colony of New Salem. Presumably he had referred to his own racial strain—after one hundred settlement years, national backgrounds should have receded into relative unimportance. Yet the party that left Earth had been heavily Caucasoid. There had been no United Africans aboard, only a handful of Black Americans.

Blacks and Collies. Unless the laws of genetics had changed radically under this sun, something was amiss.

He did not share his thoughts or his rising excitement with Render. Render was talking departure again.

Yute was not listening. "Coming to New Salem with me today?"

"I see no point to it."

Yute nodded. "Go out after dark last night?"

"Very briefly."

"See any dogs?"

"I saw eyes. I have no idea what type of animal they belonged to."

Yute nodded again. If his plans went right, he would return bearing a dog. Before he left, he loaded the hoverscooter with several items. He loaded his belt with a stunner.

As he neared New Salem, he broke open the box of meatbits and began scattering them. He described a sparse circle of tidbits around the village and then made a

heavier path to its center. There he parked the scooter and sat down to wait, stunner in hand.

While he waited, he thought. He thought of dogs he had known.

Soon they found his trail and followed it to him. They appeared cautiously nosing their way, and Yute felt victory like a searing joy.

One was the regal Collie of the previous day. Another was the tall, lank mongrel his brother had once adopted, briefly. His mother had been disenchanted with the animal's habits. A third was a silver standard poodle. And the fourth—Nip. Pet of his childhood, stocky little mutt with accidentally bobbed tail and spotted ears. Yute restrained himself from reaching for his old friend. Nip—dead many years now.

He raised the stunner casually. With his left hand, he tossed a final generous shower of meatbits.

The dogs responded warily.

And Yute squeezed the trigger.

Three dogs fled. The fourth fell, little Nip.

Unconscious, Nip changed. Radically. Lying in the street inert, he became larger. His body altered. His chest became heavy, deep, his spine abnormally short and humped. His tail vanished.

Yute went to him and lifted his head. Jowly bags of flesh sagged almost a foot from his jaw. His nose was blunted flat against his skull. And his fur was patchy, exposing expanses of bare flesh.

Little Nip was like no dog ever seen on Earth. Yute lifted the lax body to the scooter and tied it with cord.

By the time they reached the scoutcraft, the animal's eyes were open, and he was little Nip again. He writhed against the cords. Quickly, Yute dismounted and ran his hands over the animal's head and body.

The contours conformed to the appearance. The nose was sharp, the spine straight, the jowly bags nonexistent, the fur smooth. The transformation was complete.

Yute stood, controlling his elation. The question rode now on what Render, encased in shieldsuiting and clearplas, saw in the animal.

Render was unimpressed. "A mongrel left over from the colony. So what?"

Yute's eyes kindled. Little Nip had passed the test. He was a common mutt to a Normal—even a Normal hermetically sealed—as well as to an Aberrant. "So I want my people down, Render. We're claiming this world."

Render's eyes flashed back to the struggling dog. "Did you find something else in New Salem?"

"I found a decision. We're staying."

Render's face was stony. "Vantz, I have formally recommended that your party continue on to the next inhabitable planet. That recommen-

dation is on record with Earth Authority."

"Good. You're covered. Now I want my people."

Render didn't accept the ultimatum with grace. "All right. It's your decision, Vantz. And your responsibility. I'm messaging Earth Authority to that effect before I call a single individual down."

When Render returned to the scoutcraft, Yute bent to release the dog. He watched it disappear across the fields—*his* fields, his own now.

LaFarge, Black American of a family that bred Collies, had come to this world and found Blacks and Collies. A hundred years later, Yute Vantz, Aberrant, had come. There had been no humans to greet him, only dogs. The first of those had found in his mind fresh images of LaFarge's Collies.

And had become a Collie. How, Yute didn't know. Not yet. Perhaps simply by the projection of images to appropriate portions of Yute's nervous system. Perhaps by actual, physical transformation. The fact that the change was perceptible to the hands as well as to the eyes pointed to the latter theory.

In either case, LaFarge's log notes told him that the human inhabitants of New Salem had become capable, over generations, of similar transformations. Caucasoid, malformed by mutation, they had made themselves black and beautiful for LaFarge's eyes. The radiations of this sun had written a new footnote to the history of human genetics.

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Somewhere in that footnote lay the answer to New Salem's violent death. Rate and degree of mutation are seldom uniform. Some individuals are affected, others not. And the ability to project or assume a deceptive physical appearance is no minor dissimilarity. Fears have been inflamed by smaller differences. Wars have been fought, brothers killed.

Brothers could be killed again. But Yute's people would be forewarned of the changes that might occur. Yute's people would be watching for them.

Yute's people would be waiting.

Pensively Yute maneuvered the hoverscooter back into its bay.

Render answered from the cockpit. "I have messaged Earth Authority to make my position perfectly clear. Now, as a matter of self-protection, I intend to wait for confirmation of their receipt of my message before I allow any further step to be taken."

Yute sighed, exasperated. "What are you festering about, Render? You're off-loading your problems in a matter of hours. Then you're out of it."

Render's eyes blazed. "*Abby*!" he whispered hoarsely.

Yute stared at him, suddenly comprehending. "Look, why don't you zip off that suit and turn yourself free, Render? You didn't join Space Service because you wanted to see the galaxy from a mobile coffin."

Render's lips stretched into a tight line.

"You could start smoothing the way for yourself by making some substitutions in your vocabulary. For mutation read evolution."

"For mutation I read corruption."

Yute shrugged. The drive that had taken Man off Earth, past the Moon and the Solar System, still operated in Render. But it was strangulated by fear of what the universe could do to his vulnerable germ plasm. Now it poisoned him as it putrefied inside his sealed shieldsuit.

"The human race wasn't handed down on stone tablets," Yute suggested. "It evolved."

Render didn't answer. He turned and slammed into the privacy of his cabin.

It was dusk when Yute's people came down from the *Agnelles*. They came by scores, the strange, the beautiful, the grotesque—the rejected. They came with packs on their backs and scars in their hearts. They had been born to Earth. But Earth had denied them acceptance, had finally even proscribed their right to reproduce their kind.

When the crates and containers had been off-loaded, Render's scoutcraft rose up from the green hollow. The setting sun caught it and turned it to a dart of fire.

Yute's heart surged fiercely. "We'll be back, Render. And when we come, we can meet you anywhere."

On Earth or on any other planet. True, it would be generations before this sun had worked its magic on their genes. But when it had, for those of them who were favored, the image they cast would be of their own choosing. Human face, human hand—or something entirely different.

"Just stay in your tree," Yute said softly when Render's fiery missile had been swallowed up. "Someday we'll come with a sack of bananas." ■

JACK GAUGHAN

THE FOUR-HOUR FUGUE

Fear carries a scent with it that most humans can't detect. Most, but not all.

ALFRED BESTER

By now, of course, the Northeast Corridor was the Northeast slum, stretching from Canada to the Carolinas and as far west as Pittsburgh. It was a fantastic jungle of rancid violence inhabited by a steaming, restless population with no visible means of support and no fixed residence, so vast that census-takers, birth-control supervisors and the social services had given up all hope. It was a gigantic raree-show that everyone denounced and enjoyed. Even the privileged few who could afford to live highly-protected lives in highly-expensive Oases and could live anywhere else they pleased never thought of leaving. The jungle grabbed you.

There were thousands of everyday survival problems but one of the most exasperating was the shortage of fresh water. Most of the available potable water had long since been impounded by progressive industries for the sake of a better tomorrow and there was very little left to go around. Rainwater tanks on the roofs, of course. A black market, naturally. That was about all. So the jungle stank. It stank worse than the court of Queen Elizabeth, which could have bathed but didn't believe in it. The Corridor just couldn't bathe, wash clothes or clean house, and you could smell its noxious effluvium from ten miles out at sea. Welcome to the Fun Corridor.

Sufferers near the shore would have been happy to clean up in salt water, but the Corridor beaches had been polluted by so much crude oil seepage for so many generations that they were all owned by deserving oil reclamation companies. *Keep Out! No Trespassing!* And armed guards. The rivers and lakes were electrically fenced; no need for guards, just skull and crossbones signs and if you didn't know what they were telling you, tough.

Not to believe that everybody minded stinking as they skipped merrily over the rotting corpses in the streets, but a lot did and their only remedy was perfumery. There were dozens of competing companies producing perfumes but the leader, far and away, was the Continental Can Company, which hadn't manufactured cans in two centuries. They'd switched to plastics and had the good fortune about a hundred stockholders' meetings back to make the mistake

of signing a sales contract with and delivering to some cockamamie perfume brewer an enormous quantity of glowing neon containers. The corporation went bust and CCC took it over in hopes of getting some of their money back. That take-over proved to be their salvation when the perfume explosion took place; it gave them entrée to the most profitable industry of the times.

But it was neck-and-neck with the rivals until Blaise Skiaki joined CCC; then it turned into a runaway. Blaise Skiaki. Origins: French, Japanese, Black African and Irish. Education: BA, Princeton; ME, MIT; PhD, Dow Chemical. (It was Dow that had secretly tipped CCC that Skiaki was a winner and lawsuits brought by the competition were still pending before the ethics board.) Blaise Skiaki: Age, thirty-one; unmarried, straight, genius.

His sense of scent was his genius, and he was privately referred to at CCC as "The Nose." He knew everything about perfumery: the animal products, ambergris, castor, civet, musk; the essential oils distilled from plants and flowers; the balsams extruded by tree and shrub wounds, benzoin, opopanax, Peru, Talu, storax, myrrh; the synthetics created from the combination of natural and chemical scents, the latter mostly the esters of fatty acids.

He had created for CCC their most successful sellers: "Vulva," "Assuage," "Oxter" (a much more attractive brand name than "Armpitto"), "Preparation F," "Tongue War," et cetera. He was treasured by CCC, paid a salary generous enough to enable him to live in an Oasis and, best of all, granted unlimited supplies of fresh water. No girl in the Corridor could resist the offer of taking a shower with him.

But he paid a high price for these advantages. He could never use scented soaps, shaving creams, pomades or depilatories. He could never eat seasoned foods. He could drink nothing but pure water. All this, you understand, to keep The Nose pure and uncontaminated so that he could smell around in his sterile laboratory and devise new creations. He was presently composing a rather promising unguent provisionally named "Correctum," but he'd been on it for six months without any positive results and CCC was alarmed by the delay. His genius had never before taken so long.

There was a meeting of the top-level executives, names withheld on the grounds of corporate privilege.

"What's the matter with him anyway?"

"Has he lost his touch?"

"It hardly seems likely."

"Maybe he needs a rest."

"Why, he had a week's holiday last month."

"What did he do?"

"Ate up a storm, he told me."

"Could that be it?"

"No. He said he purged himself before he came back to work."

"Is he having trouble here at CCC? Difficulties with middle-management?"

"Absolutely not, Mr. Chairman. They wouldn't dare touch him."

"Maybe he wants a raise."

"No. He can't spend the money he makes now."

"Has our competition got to him?"

"They get to him all the time, General, and he laughs them off."

"Then it must be something personal."

"Agreed."

"Woman-trouble?"

"My God! We should have such trouble."

"Family-trouble?"

"He's an orphan, Mr. Chairman."

"Ambition? Incentive? Should we make him an officer of CCC?"

"I offered that to him the first of the year, sir, and he turned me down. He just wants to play in his laboratory."

"Then why isn't he playing?"

"Apparently he's got some kind of creative block."

"What the hell is the matter with him anyway?"

"Which is how you started this meeting."

"I did not."

"You did."

"Not."

"Governor, will you play back the bug."

"Gentlemen, gentlemen, please! Obviously Dr. Skiaki has personal problems which are blocking his genius. We must solve that for him. Suggestions?"

"Psychiatry?"

"That won't work without voluntary cooperation. I doubt whether he'd cooperate. He's an obstinate gook."

"Senator, I beg you! Such expressions must not be used with reference to one of our most valuable assets."

"Mr. Chairman, the problem is to discover the source of Dr. Skiaki's block."

"Agreed. Suggestions?"

"Why, the first step should be to maintain twenty-four-hour surveillance. All of the gook's—excuse me—the good doctor's activities, associates, contacts."

"By CCC?"

"I would suggest not. There are bound to be leaks which would only antagonize the good gook—doctor!"

"Outside surveillance?"

"Yes, sir."

"Very good. Agreed. Meeting adjourned."

Skip-Tracer Associates were perfectly furious. After one month

they threw the case back into CCC's lap, asking for nothing more than their expenses.

"Why in hell didn't you tell us that we were assigned to a pro, Mr. Chairman, sir? Our tracers aren't trained for that."

"Wait a minute, please. What d'you mean, 'pro'?"

"A professional Rip."

"A what?"

"Rip. Gorill. Gimpster. Crook."

"Dr. Skiaki a crook? Preposterous."

"Look, Mr. Chairman, I'll frame it for you and you draw your own conclusions. Yes?"

"Go ahead."

"It's all detailed in this report anyway. We put double tails on Skiaki every day to and from your shop. When he left they followed him home. He always went home. They staked in double shifts. He had dinner sent in from the Organic Nursery every night. They checked the messengers bringing the dinners. Legit. They checked the dinners; sometimes for one, sometimes for two. They traced some of the girls who left his penthouse. All clean. So far, all clean, yes?"

"And?"

"The crunch. Couple of nights a week he leaves the house and goes into the city. He leaves around midnight and doesn't come back until four, more or less."

"Where does he go?"

"We don't know because he shakes his tails like the pro that he is. He weaves through the Corridor like a whore or a fag cruising for trade—excuse me—and he always loses our men. I'm not taking anything away from him. He's smart, shifty, quick and a real pro. He has to be; and he's too much for Skip-Tracers to handle."

"Then you have no idea of what he does or who he meets between midnight and four?"

"No, sir. We've got nothing and you've got a problem. Not ours any more."

"Thank you. Contrary to the popular impression, corporations are not altogether idiotic. CCC understands that negatives are also results. You'll receive your expenses and the agreed-upon fee."

"Mr. Chairman, I—"

"No, no, please. You've narrowed it down to those missing four hours. Now, as you say, they're our problem."

CCC summoned Salem Burne. Mr. Burne always insisted that he was neither a physician nor a psychiatrist; he did not care to be associated with what he considered to be the drek of the professions. Salem Burne was a witch doctor; more precisely, a warlock. He made the most remarkable and penetrating analyses of disturbed people, not so much through his coven rituals of pentagons, incantations, incense and the like as through his remarkable sensitivity

to Body English and his acute interpretation of it. And this might be witchcraft after all.

Mr. Burne entered Blaise Skiaki's immaculate laboratory with a winning smile and Dr. Skiaki let out a rending howl of anguish.

"I told you to sterilize before you came."

"But I did, Doctor. Faithfully."

"You did not. You reek of anise, ilang-ilang and methyl anthranilate. You've polluted my day. Why?"

"Dr. Skiaki, I assure you that I—" Suddenly Salem Burne stopped. "Oh my God!" he groaned. "I used my wife's towel this morning."

Skiaki laughed and turned up the ventilators to full force. "I understand. No hard feelings. Now let's get your wife out of here. I have an office about half a mile down the hall. We can talk there."

They sat down in the vacant office and looked at each other. Mr. Burne saw a pleasant, youngish man with cropped black hair, small expressive ears, high telltale cheekbones, slitty eyes that would need careful watching and graceful hands that would be a dead giveaway.

"Now, Mr. Burne, how can I help you?" Skiaki said while his hands asked, "Why the hell have you come pestering me?"

"Dr. Skiaki, I'm a colleague in a sense; I'm a professional witch doctor. One crucial part of my ceremonies is the burning of various forms of incense, but they're all rather conventional. I was hoping that your expertise might suggest something different with which I could experiment."

"I see. Interesting. You've been burning stacte, onycha, galbanum, frankincense . . . that sort of thing?"

"Yes. All quite conventional."

"Most interesting. I could, of course, make many suggestions for new experiments, and yet—" Here Skiaki stopped and stared into space.

After a long pause the warlock asked, "Is anything wrong, Doctor?"

"Look here," Skiaki burst out. "You're on the wrong track. It's the burning of incense that's conventional and old-fashioned, and trying different scents won't solve your problem. Why not experiment with an altogether different approach?"

"And what would that be?"

"The Odophone principle."

"Odophone?"

"Yes. There's a scale that exists among scents as among sounds. Sharp smells correspond to high notes and heavy smells with low notes. For example, ambergris is in the treble clef while violet is in the bass. I could draw up a scent scale for you, running perhaps two octaves. Then it would be up to you to compose the music."

"This is positively brilliant, Dr. Skiaki."

"Isn't it?" Skiaki beamed. "But in all honesty I should point out that we're collaborators in brilliance. I could never have come up with the idea if you hadn't presented me with a most original challenge."

They made contact on this friendly note and talked shop enthusiastically, lunched together, told each other about themselves and made plans for the witchcraft experiments in which Skiaki volunteered to participate despite the fact that he was no believer in diabolism.

"And yet the irony lies in the fact that he is indeed devil-ridden," Salem Burne reported.

The Chairman could make nothing of this.

"Psychiatry and diabolism use different terms for the same phenomenon," Burne explained. "So perhaps I'd better translate. Those missing four hours are fugues."

The Chairman was not enlightened. "Do you mean the musical expression, Mr. Burne?"

"No, sir. A fugue is also the psychiatric description of a more advanced form of somnambulism . . . sleepwalking."

"Blaise Skiaki walks in his sleep?"

"Yes, sir, but it's more complicated than that. The sleepwalker is a comparatively simple case. He is never in touch with his surroundings. You can speak to him, shout at him, address him by name, and he remains totally oblivious."

"And the fugue?"

"In the fugue the subject is in touch with his surroundings. He can converse with you. He has awareness and memory for the events that take place within the fugue, but while he is within his fugue he is a totally different person from the man he is in real life. And—and this is most important, sir—after the fugue he remembers nothing of it."

"Then in your opinion Dr. Skiaki has these fugues two or three times a week."

"That is my diagnosis, sir."

"And he can tell us nothing of what transpires during the fugue?"

"Nothing."

"Can you?"

"I'm afraid not, sir. There's a limit to my powers."

"Have you any idea what is causing these fugues?"

"Only that he is driven by something. I would say that he is possessed by the devil, but that is the cant of my profession. Others may use different terms—compulsion or obsession. The terminology is unimportant. The basic fact is that something possessing him is compelling him to go out nights to do—what? I don't know. All I do know is that this diabolical drive most probably is what is blocking his creative work for you."

One does not summon Gretchen Nunn, not even if you're CCC

whose common stock has split twenty-five times. You work your way up through the echelons of her staff until you are finally admitted to the Presence. This involves a good deal of backing and forthing between your staff and hers, and ignites a good deal of exasperation, so the Chairman was understandably put out when at last he was ushered into Miss Nunn's workshop, which was cluttered with the books and apparatus she used for her various investigations.

Gretchen Nunn's business was working miracles; not in the sense of the extraordinary, anomalous or abnormal brought about by a superhuman agency, but rather in the sense of her extraordinary and/or abnormal perception and manipulation of reality. In any situation she could and did achieve the impossible begged by her desperate clients, and her fees were so enormous that she was thinking of going public.

Naturally the Chairman had anticipated Miss Nunn as looking like Merlin in drag. He was flabbergasted to discover that she was a Watusi princess with velvety black skin, aquiline features, great black eyes, tall, slender, twentyish, ravishing in red.

She dazzled him with a smile, indicated a chair, sat in one opposite and said, "My fee is one hundred thousand. Can you afford it?"

"I can. Agreed."

"And your difficulty—is it worth it?"

"It is."

"Then we understand each other so far. Yes, Alex?"

The young secretary who had bounced into the workshop said, "Excuse me. LeClerque insists on knowing how you made the positive identification of the mold as extraterrestrial."

Miss Nunn clicked her tongue impatiently. "He knows that I never give reasons. I only give results."

"Yes'N."

"Has he paid?"

"Yes'N."

"All right, I'll make an exception in his case. Tell him that it was based on the levo and dextro probability in amino acids and tell him to have a qualified exobiologist carry on from there. He won't regret the cost."

"Yes'N. Thank you."

She turned to the Chairman as the secretary left. "You heard that. I only give results."

"Agreed, Miss Nunn."

"Now your difficulty. I'm not committed yet. Understood?"

"Yes, Miss Nunn."

"Go ahead. Everything. Stream of consciousness, if necessary."

An hour later she dazzled him with another smile and said, "Thank you. This one is really unique. A welcome change. It's a contract, if you're still willing."

"Agreed, Miss Nunn. Would you

like a deposit or an advance?"

"Not from CCC."

"What about expenses? Should that be arranged?"

"No. My responsibility."

"But what if you have to—if you're required to—if—"

She laughed. "My responsibility. I never give reasons and I never reveal methods. How can I charge for them? Now don't forget; I want that Skip-Trace report."

A week later Gretchen Nunn took the unusual step of visiting the Chairman in his office at CCC. "I'm calling on you, sir, to give you the opportunity of withdrawing from our contract."

"Withdraw? But why?"

"Because I believe you're involved in something far more serious than you anticipated."

"But what?"

"You won't take my word for it?"

"I must know."

Miss Nunn compressed her lips. After a moment she sighed. "Since this is an unusual case I'll have to break my rules. Look at this, sir." She unrolled a large map of a segment of the Corridor and flattened it on the Chairman's desk. There was a star in the center of the map. "Skiaki's residence," Miss Nunn said. There was a large circle scribed around the star. "The limits to which a man can walk in two hours," Miss Nunn said. The circle was crisscrossed by twisting trails all emanating from the star. "I got this from the Skip-Trace report. This is how the tails traced Skiaki."

"Very ingenious, but I see nothing serious in this, Miss Nunn."

"Look closely at the trails. What do you see?"

"Why . . . each ends in a red cross."

"And what happens to each trail before it reaches the red cross?"

"Nothing. Nothing at all, except—except that the dots change to dashes."

"And that's what makes it serious."

"I don't understand, Miss Nunn."

"I'll explain. Each cross represents the scene of a murder. The dashes represent the backtracking of the actions and whereabouts of each murder victim just prior to death."

"Murder!"

"They could trace their actions just so far back and no further. Skip-Trace could tail Skiaki just so far forward and no further. Those are the dots. The dates join up. What's your conclusion?"

"It must be coincidence," the Chairman shouted. "This brilliant, charming young man. Murder? Impossible!"

"Do you want the factual data I've drawn up?"

"No, I don't. I want the truth. Proof-positive without any inferences from dots, dashes and dates."

"Very well, Mr. Chairman. You'll get it."

She rented the professional beg-

gar's pitch alongside the entrance to Skiaki's Oasis for a week. No success. She hired a Revival Band and sang hymns with it before the Oasis. No success. She finally made the contact after she promoted a job with the Organic Nursery. The first three dinners she delivered to the penthouse she came and went unnoticed; Skiaki was entertaining a series of girls, all scrubbed and sparkling with gratitude. When she made the fourth delivery he was alone and noticed her for the first time.

"Hey," he grinned. "How long has this been going on?"

"Sir?"

"Since when has Organic been using girls for delivery boys?"

"I am a delivery person, sir," Miss Nunn answered with dignity. "I have been working for the Organic Nursery since the first of the month."

"Knock off the sir bit."

"Thank you, s—Dr. Skiaki."

"How the devil do you know that I've got a doctorate?"

She'd slipped. He was listed at the Oasis and the Nursery merely as B. Skiaki, and she should have remembered. As usual, she turned her mistake into an advantage. "I know all about you, sir. Dr. Blaise Skiaki, Princeton, MIT, Dow Chemical. Chief Scent Chemist at CCC."

"You sound like 'Who's Who.'"

"That's where I read it, Dr. Skiaki."

"You read me up in 'Who's Who'? Why on earth?"

"You're the first famous man I've ever met."

"Whatever gave you the idea that I'm famous, which I'm not."

She gestured around. "I knew you had to be famous to live like this."

"Very flattering. What's your name, love?"

"Gretchen, sir."

"What's your last name?"

"People from my class don't have last names, sir."

"Will you be the delivery b—person tomorrow, Gretchen?"

"Tomorrow is my day off, Doctor."

"Perfect. Bring dinner for two."

So the affair began and Gretchen discovered, much to her astonishment, that she was enjoying it very much. Blaise was indeed a brilliant, charming young man, always entertaining, always considerate, always generous. In gratitude he gave her (remember he believed she came from the lowest Corridor class) one of his most prized possessions, a five-carat diamond he had synthesized at Dow. She responded with equal style; she wore it in her navel and promised that it was for his eyes only.

Of course he always insisted on her scrubbing up each time she visited, which was a bit of a bore; in her income bracket she probably had more fresh water than he did.

However, one convenience was that she could quit her job at the Organic Nursery and attend to other contracts while she was attending to Skiaki.

She always left his penthouse around eleven-thirty but stayed outside until one. She finally picked him up one night just as he was leaving the Oasis. She'd memorized the Salem Burne report and knew what to expect. She overtook him quickly and spoke in an agitated voice, "Mistuh. Mistuh."

He stopped and looked at her kindly without recognition. "Yes, my dear?"

"If yuh gone this way kin I come too. I scared."

"Certainly, my dear."

"Thanks, mistuh. I gone home. You gone home?"

"Well, not exactly."

"Where you gone? Y'ain't up to nothin' bad, is you? I don't want no part."

"Nothing bad, my dear. Don't worry."

"Then what you up to?"

He smiled secretly. "I'm following something."

"Somebody?"

"No, something."

"What kine something?"

"My, you're curious, aren't you. What's your name?"

"Gretchen. How 'bout you?"

"Me?"

"What's your name?"

"Wish. Call me Mr. Wish." He hesitated for a moment and then said, "I have to turn left here."

"Thas OK, Mistuh Wish. I go left, too."

She could see that all his senses were prickling, and reduced her prattle to a background of unobtrusive sound. She stayed with him as he twisted, turned, sometimes doubling back, through streets, alleys, lanes and lots, always assuring him that this was her way home too. At a rather dangerous-looking refuse dump he gave her a fatherly pat and cautioned her to wait while he explored its safety. He explored, disappeared and never reappeared.

"I replicated this experience with Skiaki six times," Miss Nunn reported to CCC. "They were all significant. Each time he revealed a little more without realizing it and without recognizing me. Burne was right. It is fugue."

"And the cause, Miss Nunn?"

"Pheromone trails."

"What?"

"I thought you gentlemen would know the term, being in the chemistry business. I see I'll have to explain. It will take some time so I insist that you do not require me to describe the induction and deduction that led me to my conclusion. Understood?"

"Agreed, Miss Nunn."

"Thank you, Mr. Chairman. Surely you all know hormones, from the Greek *hormaein,* meaning 'to excite'. They're internal secretions which excite other parts of

the body into action. Pheromones are external secretions which excite other creatures into action. It's a mute chemical language.

"The best example of the pheromone language is the ant. Put a lump of sugar somewhere outside an ant hill. A forager will come across it, feed and return to the nest. Within an hour the entire commune will be single-filing to and from the sugar, following the pheromone trail first laid down quite undeliberately by the first discoverer. It's an unconscious but compelling stimulant."

"Fascinating. And Dr. Skiaki?"

"He follows human pheromone trails. They compel him; he goes into fugue and follows them."

"Ah! An outré aspect of The Nose. It makes sense, Miss Nunn. It really does. But what trails is he compelled to follow?"

"The death-wish."

"Miss Nunn!"

"Surely you're aware of this aspect of the human psyche. Many people suffer from an unconscious but powerful death-wish, especially in these despairing times. Apparently this leaves a pheromone trail which Dr. Skiaki senses, and he is compelled to follow it."

"And then?"

"Apparently he grants the wish."

"Apparently! Apparently!" the Chairman shouted. "I ask you for proof-positive of this monstrous accusation."

"You'll get it, sir. I'm not finished with Blaise Skiaki yet. There are one or two things I have to wrap up with him, and in the course of that I'm afraid he's in for a shock. You'll have your proof-pos—"

That was a half-lie from a woman half in love. She knew she had to see Blaise again but her motives were confused. To find out whether she really loved him, despite what she knew? To find out whether he loved her? To tell him the truth about herself? To warn him or save him or run away with him? To fulfill her contract in a cool, professional style? She didn't know. Certainly she didn't know that she was in for a shock from Skiaki.

"Were you born blind?" he murmured that night.

She sat bolt upright in the bed. "What? Blind? What?"

"You heard me."

"I've had perfect sight all my life."

"Ah. Then you don't know, darling. I rather suspected that might be it."

"I certainly don't know what you're talking about, Blaise."

"Oh, you're blind all right," he said calmly. "But you've never known because you're blessed with a fantastic freak facility. You have extrasensory perception of other people's senses. You see through other people's eyes. For all I know you may be deaf and hear through their ears. You may feel with their

skin. We must explore it some time."

"I never heard of anything more absurd in all my life," she said angrily.

"I can prove it to you, if you like, Gretchen."

"Go ahead, Blaise. Prove the impossible."

"Come into the lounge."

In the living room he pointed to a vase. "What color is that?"

"Brown, of course."

"What color is that?" A tapestry.

"Gray."

"And that lamp?"

"Black."

"QED," Skiaki said. "It has been demonstrated."

"What's been demonstrated?"

"That you're seeing through my eyes."

"How can you say that?"

"Because I'm color-blind. That's what gave me the clue in the first place."

"What?"

He took her in his arms to quiet her trembling. "Darling Gretchen, the vase is green. The tapestry is amber and gold. The lamp is crimson. I can't see the colors but the decorator told me and I remember. Now why the terror? You're blind, yes, but you're blessed with something far more miraculous than mere sight; you see through the eyes of the world. I'd change places with you any time."

"It can't be true," she cried.

"It's true, love."

"What about when I'm alone?"

"When are you alone? When is anybody in the Corridor ever alone?"

She snatched up a shift and ran out of the penthouse, sobbing hysterically. She ran back to her own Oasis nearly crazed with terror. And yet she kept looking around and there were all the colors: red, orange, yellow, green, indigo, blue, violet. But there were also people swarming through the labyrinths of the Corridor as they always were, twenty-four hours a day.

Back in her apartment she was determined to put the disaster to the test. She dismissed her entire staff with stern orders to get the hell out and spend the night somewhere else. She stood at the door and counted them out, all amazed and unhappy. She slammed the door and looked around. She could still see.

"The lying son-of-a-bitch," she muttered and began to pace furiously. She raged through the apartment, swearing venomously. It proved one thing: never get into personal relationships. They'll betray you, they'll try to destroy you, and she'd made a fool of herself. But why, in God's name, did Blaise use this sort of dirty trick to destroy her? Then she smashed into something and was thrown back. She recovered her balance and looked to see what she had blundered into. It was a harpsichord.

"But . . . but I don't own a

harpsichord," she whispered in bewilderment. She started forward to touch it and assure herself of its reality. She smashed into the something again, grabbed it and felt it. It was the back of a couch. She looked around frantically. This was not one of her rooms. The harpsichord. Vivid Brueghels hanging on the walls. Jacobean furniture. Linenfold paneled doors. Crewel drapes.

"But . . . this is the . . . the Raxon apartment downstairs. I must be seeing through their eyes. I must . . . he was right. I . . ." She closed her eyes and looked. She saw a mélange of apartments, streets, crowds, people, events. She had always seen this sort of montage on occasion but had always thought it was merely the total visual recall which was a major factor in her extraordinary abilities and success. Now she knew the truth.

She began to sob again. She felt her way around the couch and sat down, despairing. When at last the convulsion spent itself she wiped her eyes courageously, determined to face reality. She was no coward. But when she opened her eyes she was shocked by another bombshell. She saw her familiar room in tones of gray. She saw Blaise Skiaki standing in the open door smiling at her.

"Blaise?" she whispered.

"The name is Wish, my dear. Mr. Wish. What's yours?"

"Blaise, for God's sake, not me! Not me. I left no death-wish trail."

"What's your name, my dear? We've met before?"

"Gretchen," she screamed. "I'm Gretchen Nunn and I have no death-wish."

"Nice meeting you again, Gretchen," he said in glassy tones, smiling the glassy smile of Mr. Wish. He took two steps toward her. She jumped up and ran behind the couch.

"Blaise, listen to me. You are not Mr. Wish. There is no Mr. Wish. You are Dr. Blaise Skiaki, a famous scientist. You are chief chemist at CCC and have created many wonderful perfumes."

He took another step toward her, unwinding the scarf he wore around his neck.

"Blaise, I'm Gretchen. We've been lovers for two months. You must remember. Try to remember. You told me about my eyes tonight . . . being blind. You must remember that."

He smiled and whirled the scarf into a cord.

"Blaise, you're suffering from fugue. A blackout. A change of psyche. This isn't the real you. It's another creature driven by a pheromone. But I left no pheromone trail. I couldn't. I've never wanted to die."

"Yes, you do, my dear. Only happy to grant your wish. That's why I'm called Mr. Wish."

She squealed like a trapped rat

and began darting and dodging while he closed in on her. She feinted him to one side, twisted to the other with a clear chance of getting out the door ahead of him, only to crash into three grinning goons standing shoulder to shoulder. They grabbed and held her.

Mr. Wish did not know that he also left a pheromone trail. It was a pheromone trail of murder.

"Oh, it's you again," Mr. Wish sniffed.

"Hey, old buddy-boy, got a looker this time, huh?"

"And loaded. Dig this layout."

"Great. Makes up for the last three which was nothin'. Thanks, buddy-boy. You can go home now."

"Why don't I ever get to kill one?" Mr. Wish exclaimed petulantly.

"Now, now. No sulks. We got to protect our bird dog. You lead. We follow and do the rest."

"And if anything goes wrong, you're the setup," one of the goons giggled.

"Go home, buddy-boy. The rest is ours. No arguments. We already explained the standoff to you. We know who you are but you don't know who we are."

"I know who I am," Mr. Wish said with dignity. "I am Mr. Wish and I still think I have the right to kill at least one."

"All right, all right. Next time. That's a promise. Now blow."

As Mr. Wish exited resentfully, they ripped Gretchen naked and let

THE ANALYTICAL LABORATORY

The AnLab is your chance to tell us which stories you like best, and thereby reward your favorite authors with solid cash. It works this way: send us a card or letter with a list of the stories in each month's issue, ranked in the order in which you preferred them. We average the votes and publish the results here. The story that comes closest to having an average of 1.00 (which would mean it received a first-place vote from everyone voting) earns its author an extra one cent a word: $100, in the case of a 10,000-word novelette. The story in second place receives a half-cent extra per word.

March 1974

PLACE	TITLE	AUTHOR	POINTS
1.	High Justice	*Jerry Pournelle*	2.37
2.	Earth, Air, Fire and Water (Pt. 2)	*Nemeth and Walling*	2.55
3.	Some Are Born to Sweet Delight	*Wayne Barton*	3.39
4.	Fourth Reich	*Herbie Brennan*	3.61
5.	Walk Barefoot on the Glass	*Joseph Green*	3.71
6.	Closing the Deal	*Barry N. Malzberg*	4.68

out a huge wow when they saw the five-carat diamond in her navel. Mr. Wish turned and saw its scintillation too.

"But that's mine," he said in a confused voice. "That's only for my eyes. I—Gretchen said she would never—" Abruptly Dr. Blaise Skiaki spoke in a tone accustomed to command: "Gretchen, what the hell are you doing here? What's this place? Who are these creatures? What's going on?"

When the police arrived they found three dead bodies and a composed Gretchen Nunn sitting with a laser pistol in her lap. She told a perfectly coherent story of forcible entry, an attempt at armed rape and robbery, and how she was constrained to meet force with force. There were a few loopholes in her account. The bodies were not armed, but if the men had said they were armed Miss Nunn, of course, would have believed them. The three were somewhat battered, but goons were always fighting. Miss Nunn was commended for her courage and cooperation.

After her final report to the Chairman (which was not the truth, the whole truth and nothing but the truth) Miss Nunn received her check and went directly to the perfume laboratory, which she entered without warning. Dr. Skiaki was doing strange and mysterious things with pipettes, flasks and reagent bottles. Without turning he ordered, "Out. Out. Out."

"Good morning, Dr. Skiaki."

He turned, displaying a mauled face and black eyes, and smiled. "Well, well, well. The famous Gretchen Nunn, I presume. Voted Person of the Year three times in succession."

"No, sir. People from my class don't have last names."

"Knock off the sir bit."

"Yes s—Mr. Wish."

"Oi!" He winced. "Don't remind me of that incredible insanity. How did everything go with the Chairman?"

"I snowed him. You're off the hook."

"Maybe I'm off his hook but not my own. I was seriously thinking of having myself committed this morning."

"What stopped you?"

"Well, I got involved in this patchouli synthesis and sort of forgot."

She laughed. "You don't have to worry. You're saved."

"You mean cured?"

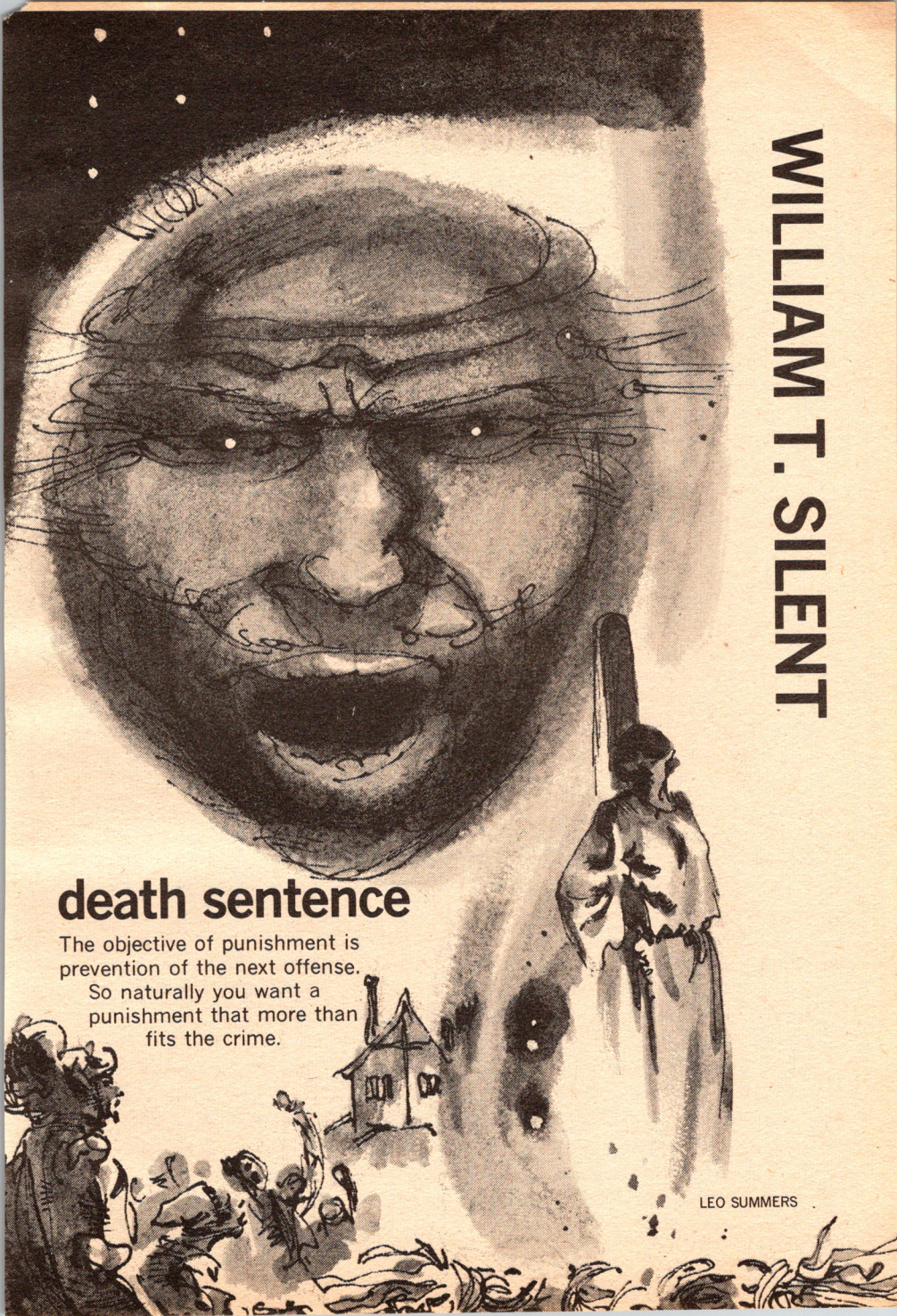
"No, Blaise. Not any more than I'm cured of my blindness. But we're both saved because we're aware. We can cope now."

He nodded slowly but not happily.

"So what are you going to do today?" she asked cheerfully. "Struggle with patchouli?"

"No," he said gloomily. "I'm still in one hell of a shock. I think I'll take the day off."

"Perfect. Bring two dinners." ■


WILLIAM T. SILENT
death sentence
The objective of punishment is prevention of the next offense.
So naturally you want a punishment that more than fits the crime.
LEO SUMMERS

It began inside his head, a tingling that at first was almost pleasant. From there it spread, radiating outward down his trunk and limbs like the warm glow of alcohol on an empty stomach. In its wake he felt his senses dulling into numbness. His first intimation of wrongness, of danger, came as the sensation continued to increase in intensity, bringing a buzzing in his ears and, instead of sight, a growing coruscation of dull red and orange fire, as if someone were rubbing his eyeballs, hard. He tried to move his hand but could not tell with certainty whether he had succeeded: his kinesthetic sense was dead. He tried to open his eyes and see, but he could neither sense movement in his eyelids nor see anything except the glow, brighter now and throbbing. He tried vainly to bring order out of chaos, but he could not concentrate his wandering senses.

The warm tingle inside him turned to nausea, as he felt the floor . . . everything . . . falling away from him like an elevator dropping too quickly. But the sensation did not stop, and he could feel nothing under his feet, nothing around him. Without orientation, he felt himself sucked helplessly into a whirlpool that spun in a sea of darkness. *Where—? How—?* He grabbed at the half-formed thoughts like a drowning man, but they spun out of his grasp as, dizzyingly, he was whirled helplessly, faster and faster. Finally, agonizingly, he was wrenched into the painless void of oblivion.

He awoke to confusion, with a shock that was like a slap in the face, or a sudden plunge into icy water, or the angry, alien jangling of an alarm clock. For a long moment he floundered, struggling frantically like a drowning man before he realizes that the crashing seas which have battered his body into near-lifelessness have left him in the shallows of a strange beach, making salvation no more than accepting the touch of the muck beneath his legs and crawling ashore.

It was like that for him, when he realized that the whirlpool had left him, but at first the shore was as strange as the dizzying emptiness had been. He grasped at the simple things first: the hot sunlight, warm on his back, which made him look through half-hooded eyes, the tensing of his leg muscles as they lifted his weight up the broad steps, the weight of clothing on his body, the warm air stirring at his feet and on his right arm.

The strangeness intruded at once, however. Alienness battled a strange sense of *déjà vu.* Although it did not constrict him, the clothing was too heavy and too long; his left arm was bent at right angles at the elbow and held somewhat stiffly at his waist; the shoes did not feel right: they were too rough and too airy, like sandals.

The broad marble steps and fluted columns were strange: the building he was entering was not in his memory.

Perhaps it was at that point that he became quietly aware that he was not alone. Other thoughts that were not his own proceeded along with his own, in intimate contact but forever apart. To these thoughts—to this other mind—the sights were commonplace; the dress was normal. The second set of thoughts frightened him, for he was not a brave man, and for a moment he felt again adrift, lost in a chaotic sea. It passed, and he realized almost at once that the other mind felt at home in the body both occupied. *He* did not. This knowledge, too, frightened him, but his fright, unshared by the other mind, was engulfed in a torrent of sensation.

Again he saw, and heard, and felt.

Forms took shape. He passed into the cool interior of the building, and for an instant vision was again blurred as his eyes grew accustomed to the absence of the dazzling sunshine. The white shapes around him were men, men in voluminous, blanket-like robes. The robes were white, with a broad, maroon stripe near the edge. *Togas.* The thought came from a corner of the other mind. The other thoughts were elusive; he tried to make contact with the other mind and could not.

Raucous voices gradually became words.

"O Caesar—"

"Great Caesar—"

"No." The word came from the lips of that body that was his and yet not his. "My word is final."

The words took on meaning. *Caesar? Caesar!*

He saw with a peculiar duality of vision, as both minds, looking out through the same eyes, evaluated the results differently. He saw menace in the men's eyes, in their angry posture, in the aggressive way they closed in on him; at the same time, the other mind—Caesar's (?)—scarcely noted these things. Confidence, not unmixed with contempt, aloofness, pride, a sense of indomitable destiny . . . but no fear, no alarm.

"But Caesar—" Someone out of the pressing group reached toward him (*him*?), and he felt his arms (*his* arms!) shove the man back. Surprise, bafflement, confusion, annoyance turning to anger at such unseemly actions. The fear in *his* mind was still not in Caesar's, as he backed away from the tightening circle.

There was no mistaking the hate and fear and righteous satisfaction burning in the eyes of those men as they drew long daggers from beneath the folds of their togas. Someone pressed close again, and he felt the thick cloak yanked from his shoulders. He lashed out, grabbing the red mantle back from

Cimber's hands, as indignation overcame all other emotion.

Then pain seared his right shoulder, and he saw someone—Casca—he knew it as soon as the other mind formed the thought, for now the barrier between the two minds was no more than a transparent veil—drawing back a blade dripping with Caesar's blood . . . *his* blood. *No!* his mind screamed without sundering the veil.

Then he saw Brutus, Brutus who was his friend, facing him with a dagger grasped in his hand. *Run, run! Get away!* But the legs would not obey him, and Caesar did not hear.

"Brutus," he choked. "Even you! Then fall, Caesar." Now he was helpless under the torrent of emotion and sensation flooding over him. Disappointment, bitterness, pain and a sick hurt which came from more than the throbbing in his shoulder. Then he raised the mantle before his face, and he could not see. Something cold and smooth touched his stomach and intruded into the inside of his belly.

It retreated, pulling with it some of his insides. His abdomen felt cold and wet. More blades stabbed into his stomach and chest. Pain exploded in him, pain so intense it defied classification, an agony of fire and ice inside him. He stumbled, his muscles not responding, and he felt himself falling. His right knee slammed onto the cold, hard, marble floor, and he rolled over.

Let me out!

A thousand nerves were screaming in pain, a scream so loud and so confused it deafened him even to thought. He was barely conscious of the floor under his back, but that and every other sensation dissolved in a last horrible geyser of agony as that other mind abruptly ceased to function. For a moment he felt the stark blackness, the lonely coldness of death, and then all feeling crumbled into an abyss of nothingness.

Sensation woke again, harshly, but the transition was easier this time because it was not so strange. His struggles ceased almost as soon as they began. He reached forth from darkness, groping, and found the light of another presence, another self which he had somehow joined.

The feeling of alienness was mitigated by his previous experience, which he remembered, but it was, nonetheless, even stronger than before. The mind—even the body—were more different. As the sensory messages of the body came to him, he discovered two things: the body was a woman's, and there was warmth, too much warmth.

Feverish thoughts from the other mind flashed by him, but he could neither slow nor comprehend them. After Caesar's unperturbed serenity, they were a confused turbulence of

emotions too great for him to assimilate.

His arms were behind him, tied. Bound also were his feet and chest. A thick, rough post was hard against his back. His hands, pressed against it, were raw from contact with the wood. This information and the unfamiliar sensations of a woman's body were shortly drowned by the waves of heat coming from near his feet. Already the nerves were protesting the sensory overload. He tried to see, but the overheated air danced in his vision like a mirage, and his eyes stung and blurred from the smoke. Noise from many voices beat unintelligibly on his ears.

At last he could understand some of the thoughts of the other mind, confused and jumbled as they were . . . *Don't know, they don't understand. Show them, please, Lord. Save me. Save your servant. God, where are You? A sign, Lord, a sign. Must I suffer this? Please, let me know what to do. It's hot, so very hot. I don't want to die like this. Please, where are You?*

Again he lost her stream of thoughts, as they became less coherent, more frantic. He could see now, dimly, through the smoke and flames from the burning wood piled all around him. A mob was outside the circle, jeering and yelling, but the words could not come to him. The only message from her ears was the hissing and crackling of the flaming branches. As his lungs labored, his nose picked up a new smell, as something other than wood began to burn.

He jerked away with such force that the body should have been shaken but was not. His mind revolted. He clawed the confines of his flaming prison futilely. He had known death already, now, and wanted no more. *Out!* he shrieked. *Let me out! The pain is too much. I can't take it!*

The last frantic thoughts of prayer in her mind were engulfed by the tide of flaming agony. Nothing penetrated but the ever-growing, all-encompassing heat, pouring in on blinding, consuming waves of red and yellow fire. There were no thoughts except the heat, the horrible pain, the burning of her legs, the flames everywhere.

Again he strove to tear himself from the wild, agonized thoughts of her disordered mind. Violently he sought release from the frail, wracked body which bound him just as it was itself bound by the glowing ropes. *Stop! Someone, stop this! Let me out!* His own mind beat in vain against the walls of his death chamber.

At last, one ultimate great surge of unimaginable burning pain obliterated even his tortured thoughts, returning him finally to the welcoming peace of oblivion.

A third time he awakened from that sea of emptiness. Briefly, vainly, he struggled against the

awakening, his mind afraid and hurt, but the now familiar rush of strange sensations could not be denied.

A confused, terrified torrent of thoughts broke against his mind, overcoming mere sensation almost before the sensory impressions had started. Fusion with the other mind came with unexpected speed and clarity.

He was running back and forth in a house, strange to him but one that the other mind immediately labeled *home.* He could feel his hands grabbing cans, tools, packages, pulling them from shelves, boxes, cabinets, stacking them as quickly in other boxes. Why he was doing this he could not tell from the tangled fragments of thought from the other mind. Shouts and screams from other voices impinged on his ears, but over all blared the voice on a radio.

". . . an emergency. Turn to 640 or 1240 for immediate instructions. Stay in your homes and keep your radio on. Please stay off the streets and highways; your protection depends on keeping the highways clear for the military. This is not a test; this is an emergency. Turn immediately to 640 or 1240 on the dial. Please—" The announcer's voice was cut off by a blast of static.

The noise ceased, but the voice did not continue.

In the same instant that he grasped the terrifying meaning of it all, he understood the thoughts of the other mind. *Not a war! My God, not a war! The children—*

Those thoughts were stopped by a fantastically bright yellow glare coming through the window. He felt the body turn automatically. *No! Don't turn! Don't look at it! Don't!*

For an instant the eyes registered light, light too bright and blinding to show any form or shape. The receptors screamed their message of painful overload and stopped completely, but the yellow glare remained behind blind eyes.

One thought from the other's dazed mind penetrated his own in the split-second of the flash. *The Bomb!*

For a moment he felt heat in every nerve of his body, a heat far greater than the flames from the wooden fire, a heat more searing, scorching, and devouring than any burn he had ever felt. Every nerve in his body overloaded at once; every thought, every feeling was swallowed up by atomic fire. His mind and the other united with their common body in a last soundless shriek of mortal agony before the blinding yellow thermal wave brought the final blackness of death.

A man sat slumped in a heavy metal chair. Were it not for the straps that fastened his arms, legs, and torso, he looked as if he might fall. The chair rather strongly re-

sembled a device once used for electrocuting condemned prisoners. Wires taped to his skin ran to complicated monitoring equipment not unlike that found in the intensive care ward of a hospital. The man's head was partially covered by an elaborate, wire-filled helmet, which was also connected to the machine next to the chair. His skin was very pale and drenched with sweat. His face was drawn and mirrored exhaustion. His eyes were closed.

Two men, dressed in white technician's smocks, stood over the maze of dials on the face of the machine. One of them nodded to the other and walked over to the other two men in the square gray room.

He inclined his head slightly to the taller of the two, a big gray-bearded man in long black robes. "The sentence has been carried out, Honorable Sir."

"Has he endured death three times?"

"Yes, Honorable Sir. Three times, as stipulated in his sentence."

"Good. Is he unharmed?"

"Yes, Honorable Sir. He is in a slight state of shock, but that is usual after such a treatment, and he will recover. The standard injection of cephalurol will bring him out of it, after a long period of sleep. Shall we take him away?"

"Yes. Have me informed when he awakens in the morning."

"Of course, Honorable Sir." He again inclined his head, turned, and went back to the man in the chair.

The short man standing with the Judiciary, a young man with a small black beard, spoke. "What was his crime, Voor?"

"Attempted murder."

The younger man's face reflected a distaste amounting almost to revulsion. "I see," he said slowly. "And for that he was actually subjected to death?"

The older man nodded briefly. "Yes, Karl. By means of the encephalomutor, his mind was incorporated into the minds of three persons about to die. Along with them, he endured all the agony of three deaths. The treatment is traumatic, of course, but necessary: in the mind of a murderer, his victim is not a *real* person, he is not killing a human being, you see, but an object. As a consequence, he cannot truly understand the enormity of his crime. The encephalomutor forces him not only to identify with the victim but also gives him a direct understanding of the act that he can never forget. The combination of the two effects, we believe, will prevent him from even contemplating such action in the future."

"And so you eliminate recidivism without having to execute the murderer."

The black-robed Judiciary turned toward the door. "That is our hope, Karl. That is our hope." ■

JIM ODBERT

GEORGE R. R. MARTIN

For the sword outwears its sheath,
And the soul wears out the breast,
And the heart must pause to breathe,
And Love itself have rest.

—Byron

A SONG FOR LYA

The cities of the Shkeen are old, older far than man's, and the great rust-red metropolis that rose from their sacred hill country had proved to be the oldest of them all. The Shkeen city had no name. It needed none. Though they built cities and towns by the hundreds and the thousands, the hill city had no rivals. It was the largest in size and population, and it was alone in the sacred hills. It was their Rome, Mecca, Jerusalem; all in one. It was *the* city, and all Shkeen came to it at last, in the final days before Union.

That city had been ancient in the days before Rome fell, had been huge and sprawling when Babylon was still a dream. But there was no feel of age to it. The human eye saw only miles and miles of low, red-brick domes; small hummocks of dried mud that covered the rolling hills like a rash. Inside they were dim and nearly airless. The rooms were small and the furniture crude.

Yet it was not a grim city. Day after day it squatted in those scrubby hills, broiling under a hot sun that sat in the sky like a weary orange melon; but the city teemed with life: smells of cooking, the sounds of laughter and talk and children running, the bustle and sweat of brickmen repairing the domes, the bells of the Joined ringing in the streets. The Shkeen were a lusty and exuberant people, almost childlike. Certainly there was nothing about them that told of great age or ancient wisdom. This is a young race, said the signs, this is a culture in its infancy.

But that infancy had lasted more than fourteen thousand years.

The human city was the real infant, less than ten Earth years old. It was built on the edge of the hills, between the Shkeen metropolis and the dusty brown plains where the spaceport had gone up. In human terms, it was a beautiful city: open and airy, full of graceful archways and glistening fountains and wide boulevards lined by trees. The buildings were wrought of metal and colored plastic and native woods, and most of them were low in deference to Shkeen architecture. Most of them . . . the Administration Tower was the exception, a polished blue steel needle that split a crystal sky.

You could see it for miles in all directions. Lyanna spied it even before we landed, and we admired it from the air. The gaunt skyscrapers of Old Earth and Baldur were taller, and the fantastic webbed cities of Arachne were far more beautiful—but that slim blue Tower was still imposing enough as it rose unrivaled to its lonely dominance above the sacred hills.

The spaceport was in the shadow of the Tower, easy walking distance. But they met us anyway. A low-slung scarlet aircar sat purring at the base of the ramp as we disembarked, with a driver lounging

against the stick. Dino Valcarenghi stood next to it, leaning on the door and talking to an aide.

Valcarenghi was the planetary administrator, the boy wonder of the sector. Young, of course, but I'd known that. Short, and good-looking, in a dark, intense way, with black hair that curled thickly against his head and an easy, genial smile.

He flashed us that smile then, when we stepped off the ramp, and reached to shake hands. "Hi," he began, "I'm glad to see you." There was no nonsense with formal introductions. He knew who we were, and we knew who he was, and Valcarenghi wasn't the kind of man who put much stock in ritual.

Lyanna took his hand lightly in hers, and gave him her vampire look: big, dark eyes opened wide and staring, thin mouth lifted in a tiny faint smile. She's a small girl, almost waiflike, with short brown hair and a child's figure. She can look very fragile, very helpless. When she wants to. But she rattles people with that look. If they know Lya's a telepath, they figure she's poking around amid their innermost secrets. Actually she's playing with them. When Lyanna is *really* reading, her whole body goes stiff and you can almost see her tremble. And those big, soul-sucking eyes get narrow and hard and opaque.

But not many people know that, so they squirm under her vampire eyes and look the other way and hurry to release her hand. Not Valcarenghi, though. He just smiled and stared back, then moved on to me.

I *was* reading when I took his hand—my standard operating procedure. Also a bad habit, I guess, since it's put some promising friendships into an early grave. My talent isn't equal to Lya's. But it's not as demanding, either. I read emotions. Valcarenghi's geniality came through strong and genuine. With nothing behind it, or at least nothing that was close enough to the surface for me to catch.

We also shook hands with the aide, a middle-aged blond stork named Nelson Gourlay. Then Valcarenghi ushered everybody into the aircar and we took off. "I imagine you're tired," he said after we were airborne, "so we'll save the tour of the city and head straight for the Tower. Nelse will show you your quarters, then you can join us for a drink, and we'll talk over the problem. You've read the materials I sent?"

"Yes," I said. Lya nodded. "Interesting background, but I'm not sure why we're here."

"We'll get to that soon enough," Valcarenghi replied. "I ought to be letting you enjoy the scenery." He gestured toward the window, smiled, and fell silent.

So Lya and I enjoyed the scenery, or as much as we could enjoy during the five-minute flight from

spaceport to tower. The aircar was whisking down the main street at treetop level, stirring up a breeze that whipped the thin branches as we went by. It was cool and dark in the interior of the car, but outside the Shkeen sun was riding toward noon, and you could see the heat waves shimmering from the pavement. The population must have been inside huddled around their air-conditioners, because we saw very little traffic.

We got out near the main entrance to the Tower and walked through a huge, sparkling-clean lobby. Valcarenghi left us then to talk to some underlings. Gourlay led us into one of the tubes and we shot up fifty floors. Then we waltzed past a secretary into another, private tube, and climbed some more.

Our rooms were lovely; carpeted in cool green, and paneled with wood. There was a complete library there, mostly Earth classics bound in synthaleather, with a few novels from Baldur, our home world. Somebody had been researching our tastes. One of the walls of the bedroom was tinted glass, giving a panoramic view of the city far below us, with a control that could darken it for sleeping.

Gourlay showed it to us dutifully, like a dour bellhop. I read him briefly though, and found no resentment. He was nervous, but only slightly. There was honest affection there for someone. Us? Valcarenghi?

Lya sat down on one of the twin beds. "Is someone bringing our luggage?" she asked.

Gourlay nodded. "You'll be well taken care of," he said. "Anything you want, ask."

"Don't worry, we will," I said. I dropped to the second bed, and gestured Gourlay to a chair. "How long you been here?"

"Six years," he said, taking the chair gratefully and sprawling out all over it. "I'm one of the veterans. I've worked under four administrators now. Dino, and Stuart before him, and Gustaffson before *him.* I was even under Rockwood a few months."

Lya perked up, crossing her legs under her and leaning forward. "That was all Rockwood lasted, wasn't it?"

"Right," Gourlay said. "He didn't like the planet, took a quick demotion to assistant administrator someplace else. I didn't care much, to tell the truth. He was the nervous type, always giving orders to prove who was boss."

"And Valcarenghi?" I asked.

Gourlay made a smile look like a yawn. "Dino? Dino's OK, the best of the lot. He's good, knows he's good. He's only been here two months, but he's gotten a lot done, and he's made a lot of friends. He treats the staff like people, calls everybody by his first name, all that stuff. People like that."

I was reading, and I read sincerity. It was Valcarenghi that Gourlay was affectionate toward, then. He believed what he was saying.

I had more questions, but I didn't get to ask them. Gourlay got up suddenly. "I really shouldn't stay," he said. "You want to rest, right? Come up to the top in about two hours and we'll go over things with you. You know where the tube is?"

We nodded, and Gourlay left. I turned to Lyanna. "What do you think?"

She lay back on the bed and considered the ceiling. "I don't know," she said. "I wasn't reading. I wonder why they've had so many administrators. And why they wanted us."

"We're Talented," I said, smiling. With the capital, yes. Lyanna and I have been tested and registered as psi Talents, and we have the licenses to prove it.

"Uh-huh," she said, turning on her side and smiling back at me. Not her vampire half-smile this time. Her sexy little girl smile.

"Valcarenghi wants us to get some rest," I said. "It's probably not a bad idea."

Lya bounced out of bed. "OK," she said, "but these twins have got to go."

"We could push them together."

She smiled again. We pushed them together.

And we *did* get some sleep. Eventually.

Our luggage was outside the door when we woke. We changed into fresh clothes, old casual stuff, counting on Valcarenghi's notorious lack of pomp. The tube took us to the top of the Tower.

The office of the planetary administrator was hardly an office. There was no desk, none of the usual trappings. Just a bar and lush blue carpets that swallowed us ankle-high, and six or seven scattered chairs. Plus lots of space and sunlight, with Shkea laid out at our feet beyond the tinted glass. All four walls this time.

Valcarenghi and Gourlay were waiting for us, and Valcarenghi did the bartending chores personally. I didn't recognize the beverage, but it was cool and spicy and aromatic, with a real sting to it. I sipped it gratefully. For some reason I felt I needed a lift.

"Shkeen wine," Valcarenghi said, smiling, in answer to an unasked question. "They've got a name for it, but I can't pronounce it yet. But give me time. I've only been here two months, and the language is rough."

"You're learning Shkeen?" Lya asked, surprised. I knew why. Shkeen is rough on human tongues, but the natives learned Terran with stunning ease. Most people accepted that happily, and just forgot about the difficulties of cracking the alien language.

"It gives me an insight into the

way they think," Valcarenghi said. "At least that's the theory." He smiled.

I read him again, although it was more difficult. Physical contact makes things sharper. Again, I got a simple emotion, close to the surface—pride this time. With pleasure mixed in. I chalked that up to the wine. Nothing beneath.

"However you pronounce the drink, I like it," I said.

"The Shkeen produce a wide variety of liquors and foodstuffs," Gourlay put in. "We've cleared many for export already, and we're checking others. Market should be good."

"You'll have a chance to sample more of the local produce this evening," Valcarenghi said. "I've set up a tour of the city, with a stop or two in Shkeentown. For a settlement of our size, our night life is fairly interesting. I'll be your guide."

"Sounds good," I said. Lya was smiling too. A tour was unusually considerate. Most Normals feel uneasy around Talents, so they rush us in to do whatever they want done, then rush us out again as quickly as possible. They certainly don't socialize with us.

"Now—the problem," Valcarenghi said, lowering his drink and leaning forward in the chair. "You read about the Cult of the Union?"

"A Shkeen religion," Lya said.

"*The* Shkeen religion," corrected Valcarenghi. "Every one of them is a believer. This is a planet without heretics."

"We read the materials you sent on it," Lya said. "Along with everything else."

"What do you think?"

I shrugged. "Grim. Primitive. But no more than any number of others I've read about. The Shkeen aren't very advanced, after all. There were religions on Old Earth that included human sacrifice."

Valcarenghi shook his head, and looked toward Gourlay.

"No, you don't understand," Gourlay started, putting his drink down on the carpet. "I've been studying their religion for six years. It's like no other in history. Nothing on Old Earth like it, no sir. Nor in any other race we've encountered.

"And Union, well, it's wrong to compare it to human sacrifice, just wrong. The Old Earth religions sacrificed one or two unwilling victims to appease their gods. Killed a handful to get mercy for the millions. And the handful generally protested. The Shkeen don't work it that way. The Greeshka takes *everyone*. And they go willingly. Like lemmings they march off to the caves to be eaten alive by those parasites. *Every* Shkeen is Joined at forty, and goes to Final Union before he's fifty."

I was confused. "All right," I said. "I see the distinction, I guess. But so what? Is this the problem? I imagine that Union is rough on the

Shkeen, but that's their business. Their religion is no worse than the ritual cannibalism of the Hrangans, is it?"

Valcarenghi finished his drink and got up, heading for the bar. As he poured himself a refill, he said, almost casually, "As far as I know, Hrangan cannibalism has claimed no human converts."

Lya looked startled. I felt startled. I sat up and stared. "What?"

Valcarenghi headed back to his seat, glass in hand. "Human converts have been joining the Cult of the Union. Dozens of them are already Joined. None of them have achieved full Union yet, but that's only a question of time." He sat down, and looked at Gourlay. So did we.

The gangling blond aide picked up the narrative. "The first convert was about seven years ago. Nearly a year before I got here, two and a half after Shkea was discovered and the settlement built. Guy named Magly. Psi-psych, worked closely with the Shkeen. He was it for two years. Then another in '08, more the next year. And the rate's been climbing ever since. There was one big one. Phil Gustaffson."

Lya blinked. "The planetary administrator?"

"The same," said Gourlay. "We've had a lot of administrators. Gustaffson came in after Rockwood couldn't stand it. He was a big, gruff old guy. Everybody loved him. He'd lost his wife and kids on his last assignment, but you'd never have known it. He was always hearty, full of fun. Well, he got interested in the Shkeen religion, started talking to them. Talked to Magly and some of the other converts too. Even went to see a Greeshka. That shook him up real bad for a while. But finally he got over it, went back to his researches. I worked with him, but I never guessed what he had in mind. A little over a year ago, he converted. He's Joined now. Nobody's ever been accepted that fast. I hear talk in Shkeentown that he may even be admitted to Final Union, rushed right in. Well, Phil was administrator here longer than anybody else. People liked him, and when he went over, a lot of his friends followed. The rate's way up now."

"Not quite one percent, and rising," Valcarenghi said. "That seems low, but remember what it means. One percent of the people in my settlement are choosing a religion that includes a very unpleasant form of suicide."

Lya looked from him to Gourlay and back again. "Why hasn't this been reported?"

"It should have been," Valcarenghi said. "But Stuart succeeded Gustaffson, and he was scared stiff of a scandal. There's no law against humans adopting an alien religion, so Stuart defined it as a nonproblem. He reported the conversion rate routinely, and nobody higher up ever bothered to make the cor-

relation and remember just what all these people were converting *to.*"

I finished my drink, set it down. "Go on," I said to Valcarenghi.

"I define the situation as a problem," he said. "I don't care how few people are involved, the idea that human beings would allow the Greeshka to consume them alarms me. I've had a team of psychs on it since I took over, but they're getting nowhere. I needed Talent. I want you two to find out *why* these people are converting. Then I'll be able to deal with the situation."

The problem was strange, but the assignment seemed straightforward enough. I read Valcarenghi to be sure. His emotions were a bit more complex this time, but not much. Confidence above all: he was sure we could handle the problem. There was honest concern there, but no fear, and not even a hint of deception. Again, I couldn't catch anything below the surface. Valcarenghi kept his hidden turmoil well hidden, if he had any.

I glanced at Lyanna. She was sitting awkwardly in her chair, and her fingers were wrapped very tightly around her wine glass. Reading. Then she loosened up and looked my way and nodded.

"All right," I said. "I think we can do it."

Valcarenghi smiled. "That I never doubted," he said. "It was only a question of whether you *would.* But enough of business for tonight. I've promised you a night on the town, and I always try to deliver on my promises. I'll meet you downstairs in the lobby in a half-hour."

Lya and I changed into something more formal back in our room. I picked a dark blue tunic, with white slacks and a matching mesh scarf. Not the height of fashion, but I was hoping that Shkea would be several months behind the times. Lya slipped into a silky white skintight with a tracery of thin blue lines that flowed over her in sensuous patterns in response to her body heat. The lines were definitely lecherous, accentuating her thin figure with a singleminded determination. A blue raincape completed the outfit.

"Valcarenghi's funny," she said as she fastened it.

"Oh?" I was struggling with the sealseam on my tunic, which refused to seal. "You catch something when you read him?"

"No," she said. She finished attaching the cape and admired herself in the mirror. Then she spun toward me, the cape swirling behind her. "That's it. He was thinking what he was saying. Oh, variations in the wording, of course, but nothing important. His mind was on what we were discussing, and behind that there was only a wall." She smiled. "Didn't get a single one of his deep dark secrets."

I finally conquered the sealseam.

"Tsk," I said. "Well, you get another chance tonight."

That got me a grimace. "The hell I do. I don't read people on off-time. It isn't fair. Besides, it's such a strain. I wish I could catch thoughts as easily as you do feelings."

"The price of Talent," I said. "You're more Talented, your price is higher." I rummaged in our luggage for a raincape, but I didn't find anything that went well, so I decided not to wear one. Capes were out, anyway. "I didn't get much on Valcarenghi either. You could have told as much by watching his face. He must be a very disciplined mind. But I'll forgive him. He serves good wine."

Lya nodded. "Right! That stuff did me good. Got rid of the headache I woke up with."

"The altitude," I suggested. We headed for the door.

The lobby was deserted, but Valcarenghi didn't keep us waiting long. This time he drove his own aircar, a battered black job that had evidently been with him for a while. Gourlay wasn't the sociable type, but Valcarenghi had a woman with him, a stunning auburn-haired vision named Laurie Blackburn. She was even younger than Valcarenghi—mid-twenties, by the look of her.

It was sunset when we took off. The whole far horizon was a gorgeous tapestry in red and orange, and a cool breeze was blowing in from the plains. Valcarenghi left the coolers off and opened the car windows, and we watched the city darken into twilight as we drove.

Dinner was at a plush restaurant with Baldurian decor—to make us feel comfortable, I guessed. The food, however, was very cosmopolitan. The spices, the herbs, the *style* of cooking were all Baldur. The meats and vegetables were native. It made for an interesting combination. Valcarenghi ordered for all four of us, and we wound up sampling about a dozen different dishes. My favorite was a tiny Shkeen bird that they cooked in soustang sauce. There wasn't very much of it, but what there was tasted great. We also polished off three bottles of wine during the meal: more of the Shkeen stuff we'd sampled that afternoon, a flask of chilled Veltaar from Baldur, and some real Old Earth Burgundy.

The talk warmed up quickly; Valcarenghi was a born storyteller and an equally good listener. Eventually, of course, the conversation got around to Shkea and the Shkeen. Laurie led it there. She'd been on Shkea for about six months, working toward an advanced degree in extee anthropology. She was trying to discover why the Shkeen civilization had remained frozen for so many millennia.

"They're older than we are, you know," she told us. "They had

cities before men were using tools. It should have been space-traveling Shkeen that stumbled on primitive men, not the other way around.

"Aren't there theories on that already?" I asked.

"Yes, but none of them are universally accepted," she said. "Cullen cites a lack of heavy metals, for example. A factor, but is it the *whole* answer? Von Hamrin claims the Shkeen didn't get enough competition. No big carnivores on the planet, so there was nothing to breed aggressiveness into the race. But he's come under a lot of fire. Shkea isn't all *that* idyllic; if it were, the Shkeen never would have reached their present level. Besides, what's the Greeshka if not a carnivore? It *eats* them, doesn't it?"

"What do you think?" Lya asked.

"I think it had something to do with the religion, but I haven't worked it all out yet. Dino's helping me talk to people and the Shkeen are open enough, but research isn't easy." She stopped suddenly and looked at Lya hard. "For me, anyway. I imagine it'd be easier for you."

We'd heard that before. Normals often figure that Talents have unfair advantages, which is perfectly understandable. We do. But Laurie wasn't resentful. She delivered her statement in a wistful, speculative tone, instead of etching it in verbal acid.

Valcarenghi leaned over and put an arm around her. "Hey," he said. "Enough shop talk. Robb and Lya shouldn't be worrying about the Shkeen until tomorrow."

Laurie looked at him, and smiled tentatively. "OK," she said lightly. "I get carried away. Sorry."

"That's OK," I told her. "It's an interesting subject. Give us a day and we'll probably be getting enthusiastic too."

Lya nodded agreement, and added that Laurie would be the first to know if our work turned up anything that would support her theory. I was hardly listening. I know it's not polite to read Normals when you're out with them socially, but there are times I can't resist. Valcarenghi had his arm around Laurie and had pulled her toward him gently. I was curious.

So I took a quick, guilty reading. He was very high—slightly drunk, I guess, and feeling very confident and protective. The master of the situation. But Laurie was a jumble—uncertainty, repressed anger, a vague fading hint of fright. And love, confused but very strong. I doubted that it was for me or Lya. She loved Valcarenghi.

I reached under the table, searching for Lya's hand, and found her knee. I squeezed it gently and she looked at me and smiled. She wasn't reading, which was good. It bothered me that Laurie loved Valcarenghi, though I didn't know why, and I was just as

glad that Lya didn't see my discontent.

We finished off the last of the wine in short order, and Valcarenghi took care of the whole bill. Then he rose. "Onward!" he announced. "The night is fresh, and we've got visits to make."

So we made visits. No holoshows or anything that drab, although the city had its share of theaters. A casino was next on the list. Gambling was legal on Shkea, of course, and Valcarenghi would have legalized it if it weren't. He supplied the chips and I lost some for him, as did Laurie. Lya was barred from playing; her Talent was too strong. Valcarenghi won big; he was a superb mindspin player, and pretty good at the traditional games too.

Then came a bar. More drinks, plus local entertainment which was better than I would have expected.

It was pitch-black when we got out, and I assumed that the expedition was nearing its end. Valcarenghi surprised us. When we got back to the car, he reached under the controls, pulled out a box of sober-ups, and passed them around.

"Hey," I said. "You're driving. Why do I need this? I just barely got up here."

"I'm about to take you to a genuine Shkeen cultural event, Robb," he said. "I don't want you making rude comments or throwing up on the natives. Take your pill."

I took my pill, and the buzz in my head began to fade. Valcarenghi already had the car airborne. I leaned back and put my arm around Lya, and she rested her head on my shoulder. "Where are we going?" I asked.

"Shkeentown," he replied, never looking back, "to their Great Hall. There's a Gathering tonight, and I figured you'd be interested."

"It will be in Shkeen, of course," Laurie said, "but Dino can translate for you. I know a little of the language too, and I'll fill in whatever he misses."

Lya looked excited. We'd read about Gatherings, of course, but we hardly expected go see one on our first day on Shkea. The Gatherings were a species of religious rite; a mass confessional of sorts for pilgrims who were about to be admitted to the ranks of the Joined. Pilgrims swelled the hill city daily, but Gatherings were conducted only three or four times a year when the numbers of those-about-to-be-Joined climbed high enough.

The aircar streaked almost soundlessly through the brightly-lit settlement, passing huge fountains that danced with a dozen colors and pretty ornamental arches that flowed like liquid fire. A few other cars were airborne, and here and there we flew above pedestrians strolling the city's broad malls. But most people were inside, and light and music flooded from many of the homes we passed.

Then, abruptly, the character of the city began to change. The level

ground began to roll and heave, hills rose before us and then behind us, and the lights vanished. Below, the malls gave way to unlit roads of crushed stone and dust, and the domes of glass and metal done in fashionable mock-Shkeen yielded to their older brick brothers. The Shkeen city was quieter than its human counterpart; most of the houses were darkly silent.

Then, ahead of us, a hummock appeared that was larger than the others—almost a hill in itself, with a big arched door and a series of slit-like windows. And light leaked from this one, and noise, and there were Shkeen outside.

I suddenly realized that, although I'd been on Shkea for nearly a day, this was the first sight I'd caught of the Shkeen. Not that I could see them all that clearly from an aircar at night. But I did see them. They were smaller than men—the tallest was around five feet—with big eyes and long arms. That was all I could tell from above.

Valcarenghi put the car down alongside the Great Hall, and we piled out. Shkeen were trickling through the arch from several directions, but most of them were already inside. We joined the trickle, and nobody even looked twice at us, except for one character who hailed Valcarenghi in a thin, squeaky voice and called him Dino. He had friends even here.

The interior was one huge room, with a great crude platform built in the center and an immense crowd of Shkeen circling it. The only light was from torches that were stuck in grooves along the walls, and on high poles surrounding the platform. Someone was speaking, and every one of those great, bulging eyes was turned his way. We four were the only humans in the Hall.

The speaker, outlined brightly by the torches, was a fat, middle-aged Shkeen who moved his arms slowly, almost hypnotically, as he talked. His speech was a series of whistles, wheezes, and grunts, so I didn't listen very closely. He was much too far away to read. I was reduced to studying his appearance, and that of other Shkeen near me. All of them were hairless, as far as I could see, with softish-looking orange skin that was creased by a thousand tiny wrinkles. They wore simple shifts of crude, multicolored cloth, and I had difficulty telling male from female.

Valcarenghi leaned over toward me and whispered, careful to keep his voice low. "The speaker is a farmer," he said. "He's telling the crowd how far he's come, and some of the hardships of his life."

I looked around. Valcarenghi's whisper was the only sound in the place. Everyone else was dead quiet, eyes riveted on the platform, scarcely breathing. "He's saying that he has four brothers," Valcarenghi told me. "Two have gone on to Final Union, one is among the Joined. The other is younger than

himself, and now owns the farm." He frowned. "The speaker will never see his farm again," he said, more loudly, "but he's happy about it."

"Bad crops?" asked Lya, smiling irreverently. She'd been listening to the same whisper. I gave her a stern look.

The Shkeen went on. Valcarenghi stumbled after him. "Now he's telling his crimes, all the things he's done that he's ashamed of, his blackest soul-secrets. He's had a sharp tongue at times, he's vain, once he actually struck his younger brother. Now he speaks of his wife, and the other women he has known. He has betrayed her many times, copulating with others. As a boy, he mated with animals for he feared females. In recent years he has grown incapable, and his brother has serviced his wife."

On and on and on it went, in incredible detail, detail that was both startling and frightening. No intimacy went untold, no secret was left undisturbed. I stood and listened to Valcarenghi's whispers, shocked at first, finally growing bored with the squalor of it all. I began to get restless. I wondered briefly if I knew any human half so well as I now knew this great fat Shkeen. Then I wondered whether Lyanna, with her Talent, knew anyone half so well. It was almost as if the speaker wanted all of us to live through his life right here and now.

His speech lasted for what seemed hours, but finally it began to wind up. "He speaks now of Union," Valcarenghi whispered. "He will be Joined, he is joyful about it, he has craved it for so long. His misery is at an end, his aloneness will cease, soon he shall walk the streets of the sacred city and peal his joy with the bells. And then Final Union, in the years to come. He will be with his brothers in the afterlife."

"No, Dino." This whisper was Laurie. "Quit wrapping human phrases around what he says. He will be his brothers, he says. The phrase also implies they will be him."

Valcarenghi smiled. "OK, Laurie. If you say so . . ."

Suddenly the fat farmer was gone from the platform. The crowd rustled, and another figure took his place: much shorter, wrinkled excessively, one eye a great gaping hole. He began to speak, haltingly at first, then with greater skill.

"This one is a brickman, he has worked many domes, he lives in the sacred city. His eye was lost many years ago, when he fell from a dome and a sharp stick poked into him. The pain was very great, but he returned to work within a year, he did not beg for premature Union, he was very brave, he is proud of his courage. He has a wife, but they have never had offspring, he is sad of that, he cannot talk to his wife easily, they are

apart even when together and she weeps at night, he is sad of that too, but he has never hurt her and . . ."

It went on for hours again. My restlessness stirred again, but I cracked down on it—this was too important. I let myself get lost in Valcarenghi's narration, and the story of the one-eyed Shkeen. Before long, I was riveted as closely to the tale as the aliens around me. It was hot and stuffy and all but airless in the dome, and my tunic was getting sooty and soaked by sweat, some of it from the creatures who pressed around me. But I hardly noticed.

The second speaker ended as had the first, with a long praise of the joy of being Joined and the coming of Final Union. Toward the end, I hardly even needed Valcarenghi's translation—I could hear the happiness in the voice of the Shkeen, and see it in his trembling figure. Or maybe I was reading, unconsciously. But I can't read at that distance—unless the target is emoting very hard.

A third speaker ascended the platform, and spoke in a voice louder than the others. Valcarenghi kept pace. "A woman this time," he said. "She has carried eight children for her man, she has four sisters and three brothers, she has farmed all her life, she . . ."

Suddenly her speech seemed to peak, and she ended a long sequence with several sharp, high whistles. Then she fell silent. The crowd, as one, began to respond with whistles of their own. An eerie, echoing music filled the Great Hall, and the Shkeen around us all began to sway and whistle. The woman looked out at the scene from a bent and broken position.

Valcarenghi started to translate, but he stumbled over something. Laurie cut in before he could backtrack. "She has now told them of great tragedy," she whispered. "They whistle to show their grief, their oneness with her pain."

"Sympathy, yes," said Valcarenghi, taking over again. "When she was young, her brother grew ill, and seemed to be dying. Her parents told her to take him to the sacred hills, for they could not leave the younger children. But she shattered a wheel on her cart through careless driving, and her brother died upon the plains. He perished without Union. She blames herself."

The Shkeen had begun again. Laurie began to translate, leaning close to us and using a soft whisper. "Her brother died, she is saying again. She faulted him, denied him Union, now he is sundered and alone and gone without . . . without . . ."

"Afterlife," said Valcarenghi. "Without afterlife."

"I'm not sure that's entirely right," Laurie said. "That concept is . . ."

Valcarenghi waved her silent. "Listen," he said. He continued to translate.

We listened to her story, told in Valcarenghi's increasingly hoarse whisper. She spoke longest of all, and her story was the grimmest of the three. When she finished, she too was replaced. But Valcarenghi put a hand on my shoulder and beckoned toward the exit.

The cool night air hit like ice water, and I suddenly realized that I was drenched with sweat. Valcarenghi walked quickly toward the car. Behind us, the speaking was still in progress, and the Shkeen showed no signs of tiring.

"Gatherings go on for days, sometimes weeks," Laurie told us as we climbed inside the aircar. "The Shkeen listen in shifts, more or less—they try terribly to hear every word, but exhaustion gets to them sooner or later and they retire for brief rests, then return for more. It is a great honor to last through an entire Gathering without sleep."

Valcarenghi shot us aloft. "I'm going to try that someday," he said. "I've never attended for more than a couple of hours, but I think I could make it if I fortified myself with drugs. We'll get more understanding between human and Shkeen if we participate more fully in their rituals."

"Oh," I said. "Maybe Gustaffson felt the same way."

Valcarenghi laughed lightly. "Yes, well, I don't intend to participate *that* fully."

The trip home was a tired silence. I'd lost track of time but my body insisted that it was almost dawn. Lya, curled up under my arm, looked drained and empty and only half-awake. I felt the same way.

We left the aircar in front of the Tower, and took the tubes up. I was past thinking. Sleep came very, very quickly.

I dreamed that night. A good dream, I think, but it faded with the coming of the light, leaving me empty and feeling cheated. I lay there, after waking, with my arm around Lya and my eyes on the ceiling, trying to recall what the dream had been about. But nothing came.

Instead, I found myself thinking about the Gathering, running it through again in my head. Finally I disentangled myself and climbed out of bed. We'd darkened the glass, so the room was still pitch-black. But I found the controls easily enough, and let through a trickle of late morning light.

Lya mumbled some sort of sleepy protest and rolled over, but made no effort to get up. I left her alone in the bedroom and went out to our library, looking for a book on the Shkeen—something with a little more detail than the material we'd been sent. No luck. The library was meant for recreation, not research.

I found a viewscreen and punched up to Valcarenghi's office. Gourlay answered. "Hello," he said. "Dino figured you'd be calling. He's not here right now. He's out arbitrating a trade contract. What do you need?"

"Books," I said, my voice still a little sleepy. "Something on the Shkeen."

"That I can't do," Gourlay said. "Are none, really. Lots of papers and studies and monographs, but no full-fledged books. I'm going to write one, but I haven't gotten to it yet. Dino figured I could be your resource, I guess."

"Oh."

"Got any questions?"

I searched for a question, found none. "Not really," I said, shrugging. "I just wanted general background, maybe some more information on Gatherings."

"I can talk to you about that later," Gourlay said. "Dino figured you'd want to get to work today. We can bring people to the Tower, if you'd like, or you can get out to them."

"We'll go out," I said quickly. Bringing subjects in for interviews fouls up everything. They get all anxious, and that covers up any emotions I might want to read, and they *think* on different things, too, so Lyanna has trouble.

"Fine," said Gourlay. "Dino put an aircar at your disposal. Pick it up down in the lobby. Also, they'll have some keys for you, so you can come straight up here to the office without bothering with the secretaries and all."

"Thanks," I said. "Talk to you later." I flicked off the viewscreen and walked back to the bedroom.

Lya was sitting up, the covers around her waist. I sat down next to her and kissed her. She smiled, but didn't respond. "Hey," I said. "What's wrong?"

"Headache," she replied. "I thought sober-ups were supposed to get rid of hangovers."

"That's the theory. Mine worked pretty well." I went to the closet and began looking for something to wear. "We should have headache pills around here someplace. I'm sure Dino wouldn't forget anything that obvious."

"Umpf. Yes. Throw me some clothes."

I grabbed one of her coveralls and tossed it across the room. Lya stood up and slipped into it while I dressed, then went off to the washroom.

"Better," she said. "You're right, he didn't forget medicines."

"He's the thorough sort."

She smiled. "I guess. Laurie knows the language better, though. I read her. Dino made a couple of mistakes in that translation last night."

I'd guessed at something like that. No discredit to Valcarenghi; he was working on a four-month handicap, from what they'd said. I nodded. "Read anything else?"

"No. I tried to get those speakers, but the distance was too

much." She came up and took my hand. "Where are we going today?"

"Shkeentown," I said. "Let's try to find some of these Joined. I didn't notice any at the Gathering."

"No. Those things are for Shkeen about-to-be-Joined."

"So I hear. Let's go."

We went. We stopped at the fourth level for a late breakfast in the Tower cafeteria, then got our aircar pointed out to us by a man in the lobby. A sporty green four-seater, very common, very inconspicuous.

I didn't take the aircar all the way into the Shkeen city, figuring we'd get more of the feel of the place if we went through on foot. So I dropped down just beyond the first range of hills, and we walked.

The human city had seemed almost empty, but Shkeentown lived. The crushed-rock streets were full of aliens, hustling back and forth busily, carrying loads of bricks and baskets of fruit and clothing. There were children everywhere, most of them naked; fat balls of orange energy that ran around us in circles, whistling and grunting and grinning, tugging at us every once in a while. The kids looked different from the adults. They had a few patches of reddish hair, for one thing, and their skins were still smooth and unwrinkled. They were the only ones who really paid any attention to us. The adult Shkeen just went about their business, and gave us an occasional friendly smile. Humans were obviously not all that uncommon in the streets of Shkeentown.

Most of the traffic was on foot, but small wooden carts were also common. The Shkeen draft animal looked like a big green dog that was about to be sick. They were strapped to the carts in pairs, and they whined constantly as they pulled. So, naturally, men called them whiners. In addition to whining, they also defecated constantly. That, with odors from the food peddled in baskets and the Shkeen themselves, gave the city a definite pungency.

There was noise too, a constant clamor. Kids whistling, Shkeen talking loudly with grunts and whimpers and squeaks, whiners whining and their carts rattling over the rocks. Lya and I walked through it all silently, hand in hand, watching and listening and smelling and . . . reading.

I was wide open when I entered Shkeentown, letting everything wash over me as I walked, unfocused but receptive. I was the center of a small bubble of emotion—feelings rushed up at me as Shkeen approached, faded as they walked away, circled around and around with the dancing children. I swam in a sea of impressions. And it startled me.

It startled me because it was all so familiar. I'd read aliens before. Sometimes it was difficult, sometimes it was easy, but it was never

pleasant. The Hrangans have sour minds, rank with hate and bitterness, and I feel unclean when I come out. The Fyndii feel emotions so palely that I can scarcely read them at all. The Damoosh are . . . *different.* I read them strongly, but I can't find names for the feelings I read.

But the Shkeen—it was like walking down a street on Baldur. No, wait—more like one of the Lost Colonies, when a human settlement has fallen back into barbarism and forgotten its origins. Human emotions rage there, primal and strong and real, but less sophisticated than on Old Earth or Baldur. The Shkeen were like that: primitive, maybe, but very understandable. I read joy and sorrow, envy, anger, whimsy, bitterness, yearning, pain. The same heady mixture that engulfs me everywhere, when I open myself to it.

Lya was reading, too. I felt her hand tense in mine. After a while, it softened again. I turned to her, and she saw the question in my eyes.

"They're people," she said. "They're like us."

I nodded. "Parallel evolution, maybe. Shkea might be an older Earth, with a few minor differences. But you're right. They're more human than any other race we've encountered in space." I considered that. "Does that answer Dino's question? If they're like us, it follows that their religion would be more appealing than a *really* alien one."

"No, Robb," Lya said. "I don't think so. Just the reverse. If they're like us, it doesn't make sense that *they'd* go off so willingly to die. See?"

She was right, of course. There was nothing suicidal in the emotions I'd read, nothing unstable, nothing really abnormal. Yet every one of the Shkeen went off to Final Union in the end.

"We should focus on somebody," I said. "This blend of thought isn't getting us anywhere." I looked around to find a subject, but just then I heard the bells begin.

They were off to the left somewhere, nearly lost in the city's gentle roar. I tugged Lya by the hand, and we ran down the street to find them, turning left at the first gap in the orderly row of domes.

The bells were still ahead, and we kept running, cutting through what must have been somebody's yard, and climbing over a low bush-fence that bristled with sweethorns. Beyond that was another yard, a dung-pit, more domes, and finally a street. It was there we found the bell-ringers.

There were four of them, all Joined, wearing long gowns of bright red fabric that trailed in the dust, with great bronze bells in either hand. They rang the bells constantly, their long arms swinging back and forth, the sharp, clanging notes filling the street. All four were elderly, as Shkeen go—hairless

and pinched up with a million tiny wrinkles. But they smiled very widely, and the younger Shkeen that passed smiled at them.

On their heads rode the Greeshka.

I'd expected to find the sight hideous. I didn't. It was faintly disquieting, but only because I knew what it meant. The parasites were bright blobs of crimson goo, ranging in size from a pulsing wart on the back of one Shkeen skull to a great sheet of dripping, moving red that covered the head and shoulders of the smallest like a living cowl. The Greeshka lived by sharing the nutrients in the Shkeen bloodstream, I knew.

And also by slowly—oh so slowly—consuming its host.

Lya and I stopped a few yards from them, and watched them ring. Her face was solemn, and I think mine was. All of the others were smiling, and the songs that the bells sang were songs of joy. I squeezed Lyanna's hand tightly. "Read," I whispered.

We read.

Me: I read bells. Not the sound of bells, no, no, but the *feel* of bells, the *emotion* of bells, the bright clanging joy, the hooting-shouting-ringing loudness, the song of the Joined, the togetherness and the sharing of it all. I read what the Joined felt as they pealed their bells, their happiness and anticipation, their ecstasy in telling others of their clamorous contentment. And I read love, coming from them in great hot waves, passionate possessive love of a man and woman together, not the weak watery affection of the human who "loves" his brothers. This was real and fervent and it burned almost as it washed over me and surrounded me. They loved themselves, and they loved all Shkeen, and they loved the Greeshka, and they loved each other, and they loved us. They loved us. They loved *me,* as hotly and wildly as Lya loved me. And with love I read belonging, and sharing. They four were all apart, all distinct, but they thought as one almost, and they belonged to each other, and they belonged to the Greeshka, and they were all *together* and linked although each was still himself and none could read the others as I read them.

And Lyanna? I reeled back from them, and shut myself off, and looked at Lya. She was white-faced, but smiling. "They're beautiful," she said, her voice very small and soft and wondering. Drenched in love, I still remembered how much I loved *her,* and how I was a part of her and her of me.

"What—what did you read?" I asked, my voice fighting the continued clangor of the bells.

She shook her head, as if to clear it. "They love us," she said. "You must know that, but oh, I felt it, they *do* love us. And it's so *deep.* Below that love there's more love, and below that more, and on and on forever. Their minds are so

deep, so open. I don't think I've ever read a human that deeply. Everything is right at the surface, right there, their whole lives and all their dreams and feelings and memories and oh—I just took it in, swept it up with a reading, a glance. With men, with humans, it's so much work, I have to dig, I have to fight, and even then I don't get down very far. You know, Robb, you know. Oh, *Robb*!" And she came to me and pressed tight against me, and I held her in my arms. The torrent of feeling that had washed over me must have been a tidal wave for her. Her Talent was broader and deeper than mine, and now she was shaken. I read her as she clutched me, and I read love, great love, and wonder and happiness, but also fear, nervous fear swirling through it all.

Around us, the ringing suddenly stopped. The bells, one by one, ceased to swing, and the four Joined stood in silence for a brief second. One of the other Shkeen nearby came up to them with a huge, cloth-covered basket. The smallest of the Joined threw back the cloth, and the aroma of hot meatrolls rose in the street. Each of the Joined took several from the basket, and before long they were all crunching away happily, and the owner of the rolls was grinning at them. Another Shkeen, a small nude girl, ran up and offered them a flask of water, and they passed it around without comment.

"What's going on?" I asked Lya. Then, even before she told me, I remembered. Something from the literature that Valcarenghi had sent. The Joined did no work. Forty Earth-years they lived and toiled, but from First Joining to Final Union there was only joy and music, and they wandered the streets and rang their bells and talked and sang, and other Shkeen gave them food and drink. It was an honor to feed a Joined, and the Shkeen who had given up his meatrolls was radiating pride and pleasure.

"Lya," I whispered, "can you read them now?"

She nodded against my chest and pulled away and stared at the Joined, her eyes going hard and then softening again. She looked back at me. "It's different," she said, curious.

"How?"

She squinted in puzzlement. "I

don't know. I mean, they still love us, and all. But now their thoughts are, well, sort of more human. There are levels, you know, and digging isn't easy, and there are hidden things, things they hide even from themselves. It's not all open like it was. They're thinking about the food now and how good it tastes. It's all very vivid. I could taste the rolls myself. But it's not the same."

I had an inspiration. "How many minds are there?"

"Four," she said. "Linked somehow, I think. But not really." She stopped, confused, and shook her head. "I mean, they sort of feel each other's emotions, like you do, I guess. But not thoughts, not the detail. I can read them, but they don't read each other. Each one is distinct. They were closer before, when they were ringing, but they were always individuals."

I was slightly disappointed. "Four minds then, not one?"

"Umpf, yes. Four."

"And the Greeshka?" My other bright idea. If the Greeshka had minds of their own . . .

"Nothing," Lya said. "Like reading a plant, or a piece of clothing. Not even yes-I-live."

That was disturbing. Even lower animals had some vague consciousness of life—the feeling Talents called yes-I-live—usually only a dim spark that it took a major Talent to see. But Lya *was* a major Talent.

"Let's talk to them," I said. She nodded, and we walked up to where the Joined were munching their meatrolls. "Hello," I said awkwardly, wondering how to address them. "Can you speak Terran?"

Three of them looked at me without comprehension. But the fourth one, the little one whose Greeshka was a rippling red cape, bobbed his head up and down. "Yesh," he said, in a piping-thin voice.

I suddenly forgot what I was going to ask, but Lyanna came to my rescue. "Do you know of human Joined?" she said.

He grinned. "All Joined are one," he said.

"Oh," I said. "Well, yes, but do you know any who look like us? Tall, you know, with hair and skin that's pink or brown or something?" I came to another awkward halt, wondering just how *much* Terran the old Shkeen knew, and eyeing his Greeshka a little apprehensively.

His head bobbled from side to side. "Joined are all different, but all are one, all are shame. Shome look ash you. Would you Join?"

"No, thanks," I said. "Where can I find a human Joined?"

He bobbled his head some more. "Joined shing and ring and walk the shacred city."

Lya had been reading. "He doesn't know," she told me. "The Joined just wander and play their

bells. There's no pattern to it, nobody keeps track. It's all random. Some travel in groups, some alone, and new groups form every time two bunches meet."

"We'll have to search," I said.

"Eat," the Shkeen told us. He reached into the basket on the ground and his hands came out with two steaming meatrolls. He pressed one into my hand, one in Lya's.

I looked at it dubiously. "Thank you," I told him. I pulled at Lya with my free hand and we walked off together. The Joined grinned at us as we left, and started ringing once more before we were halfway down the street.

The meatroll was still in my hand, its crust burning my fingers. "Should I eat this?" I asked Lya.

She took a bite out of hers. "Why not? We had them last night in the restaurant, right? And I'm sure Valcarenghi would've warned us if the native food was poisonous."

That made sense, so I lifted the roll to my mouth and took a bite as I walked. It was hot, and also *hot*, and it wasn't a bit like the meatrolls we'd sampled the previous night. Those had been golden, flaky things, seasoned gently with orangespice from Baldur. The Shkeen version was crunchy, and the meat inside dripped grease and burned my mouth. But it was good, and I was hungry, and the roll didn't last long.

"Get anything else when you read the small guy?" I asked Lya around a mouthful of hot roll.

She swallowed, and nodded. "Yes, I did. He was happy, even more than the rest. He's older. He's near Final Union, and he's very thrilled about it." She spoke with her old easy manner; the aftereffects of reading the Joined seemed to have faded.

"Why?" I was musing out loud. "He's going to *die*. Why is he so happy about it?"

Lya shrugged. "He wasn't thinking in any great analytical detail, I'm afraid."

I licked my fingers to get rid of the last of the grease. We were at a crossroads, with Shkeen bustling by us in all directions, and now we could hear more bells on the wind. "More Joined," I said. "Want to look them up?"

"What would we find out? That we don't already know? We need a *human* Joined."

"Maybe one of this batch *will* be human."

I got Lya's withering look. "Ha. What are the odds?"

"All right," I conceded. It was now late afternoon. "Maybe we'd better head back. Get an earlier start tomorrow. Besides, Dino is probably expecting us for dinner."

Dinner, this time, was served in Valcarenghi's office, after a little

additional furniture had been dragged in. His quarters, it turned out, were on the level below, but he preferred to entertain upstairs where his guests could enjoy the spectacular Tower view.

There were five of us, all told: me and Lya, Valcarenghi and Laurie, plus Gourlay. Laurie did the cooking, supervised by master chef Valcarenghi. We had beefsteaks, bred on Shkea from Old Earth stock, plus a fascinating blend of vegetables that included mushrooms from Old Earth, groundpips from Baldur, and Shkeen sweethorns. Dino liked to experiment and the dish was one of his inventions.

Lya and I gave a full report on the day's adventures, interrupted only by Valcarenghi's sharp, perceptive questioning. After dinner, we got rid of tables and dishes and sat around drinking Veltaar and talking. This time Lya and I asked the questions, with Gourlay supplying the biggest chunk of the answers. Valcarenghi listened from a cushion on the floor, one arm around Laurie, the other holding his wine glass. We were not the first Talents to visit Shkea, he told us. Nor the first to claim the Shkeen were manlike.

"Suppose that means something," he said. "But I don't know. They're *not* men, you know. No, sir. They're much more social, for one thing. Great little city builders from way back, always in towns, always surrounding themselves with others. And they're more communal than man, too. Cooperate in all sorts of things, and they're big on sharing. Trade, for instance—they see that as mutual-sharing."

Valcarenghi laughed. "You can say that again. I just spent the whole day trying to work out a trade contract with a group of farmers who hadn't dealt with us before. It's not easy, believe me. They give us as much of their stuff as we ask for, if they don't need it themselves and no one else has asked for it earlier. But then they want to get whatever *they* ask for in the future. They expect it, in fact. So every time we deal we've got a choice; hand them a blank check, or go through an incredible round of talks that ends with them convinced that we're totally selfish."

Lya wasn't satisfied. "What about sex?" she demanded. "From the stuff you were translating last night, I got the impression they're monogamous."

"They're confused about sex relationships," Gourlay said. "It's very strange. Sex is sharing, you see, and it's good to share with everyone. But the sharing has to be real and meaningful. That creates problems."

Laurie sat up, attentive. "I've studied the point," she said quickly. "Shkeen morality insists they love *everybody*. But they can't do it, they're too human, too possessive.

They wind up in monogamous relationships, because a really deep sex-sharing with one person is better than a million shallow physical things, in their culture. The ideal Shkeen would sex-share with everyone, with each of the unions being just as deep, but they can't achieve that ideal."

I frowned. "Wasn't somebody guilty last night over betraying his wife?"

Laurie nodded eagerly. "Yes, but the guilt was because his other relationships caused his sharing with his wife to diminish. *That* was the betrayal. If he'd been able to manage it without hurting his older relationship, the sex would have been meaningless. And, if all of the relationships have been real love-sharing, it would have been a plus. His wife would have been proud of him. It's quite an achievement for a Shkeen to be in a multiple union that works."

"And one of the greatest Shkeen crimes is to leave another alone," Gourlay said. "Emotionally alone. Without sharing."

I mulled over that, while Gourlay went on. The Shkeen had little crime, he told us. Especially no violent crime. No murders, no beatings, no prisons, no wars in their long, empty history.

"They're a race without murderers," Valcarenghi said. "Which may explain something. On Old Earth, the same cultures that had the highest suicide rates often had the lowest murder rates, too. And the Shkeen suicide rate is one hundred percent."

"They kill animals," I said.

"Not part of the Union," Gourlay replied. "The Union embraces all that thinks, and its creatures may not be killed. They do not kill Shkeen, or humans, or Greeshka."

Lya looked at me, then at Gourlay. "The Greeshka don't think," she said. "I tried to read them this morning and got nothing but the minds of the Shkeen they rode. Not even a yes-I-live."

"We've known that, but the point's always puzzled me," Valcarenghi said, climbing to his feet. He went to the bar for more wine, brought out a bottle, and filled our glasses. "A truly mindless parasite, but an intelligent race like the Shkeen are enslaved by it. Why?"

The new wine was good and chilled, a cold trail down my throat. I drank it, and nodded, remembering the flood of euphoria that had swept over us earlier that day. "Drugs," I said, speculatively. "The Greeshka must produce an organic pleasure drug. The Shkeen submit to it willingly and die happy. The joy is real, believe me. We felt it."

Lyanna looked doubtful, though, and Gourlay shook his head adamantly. "No, Robb. Not so. We've experimented on the Greeshka, and . . ."

He must have noticed my raised eyebrows. He stopped.

"How did the Shkeen feel about that?" I asked.

"Didn't tell them. They wouldn't have liked it, not at all. Greeshka's just an animal, but it's their God. Don't fool around with God, you know. We refrained for a long time, but when Gustaffson went over, old Stuart had to know. His orders. We didn't get anywhere, though. No extracts that might be a drug, no secretions, nothing. In fact, the Shkeen are the *only* native life that submits so easily. We caught a whiner, you see, and strapped it down, and let a Greeshka link up. Then, couple hours later, we yanked the straps. Damn whiner was furious, screeching and yelping, attacking the thing on its head. Nearly clawed its own skull to ribbons before it got it off."

"Maybe only the Shkeen are susceptible?" I said. A feeble rescue attempt.

"Not quite," said Valcarenghi, with a small, thin smile. "There's us."

Lya was strangely silent in the tube, almost withdrawn. I assumed she was thinking about the conversation. But the door to our suite had barely slid shut behind us when she turned toward me and wrapped her arms around me.

I reached up and stroked her soft brown hair, slightly startled by the hug. "Hey," I muttered, "what's wrong?"

She gave me her vampire look, big-eyed and fragile. "Make love to me, Robb," she said with a soft sudden urgency. "Please. Make love to me now."

I smiled, but it was a puzzled smile, not my usual lecherous bedroom grin. Lya generally comes on impish and wicked when she's horny, but now she was all troubled and vulnerable. I didn't quite get it.

But it wasn't a time for questions, and I didn't ask any. I just pulled her to me wordlessly and kissed her hard, and we walked together to the bedroom.

And we made love, *really* made love, more than poor Normals can do. We joined our bodies as one, and I felt Lya stiffen as her mind reached out to mine. And as we moved together I was opening myself to her, drowning myself in the flood of love and need and fear that was pouring from her.

Then, quickly as it had begun, it ended. Her pleasure washed over me in a raw red wave. And I joined her on the crest, and Lya clutched me tightly, her eyes shrunk up small as she drank it all in.

Afterwards, we lay there in the darkness and let the stars of Shkea pour their radiance through the window. Lya huddled against me, her head on my chest, while I stroked her.

"That was good," I said in a drowsy-dreamy voice, smiling

in the star-filled darkness.

"Yes," she replied. Her voice was soft and small, so small I barely heard it. "I love you, Robb," she whispered.

"Uh-huh," I said. "And I love you."

She pulled loose of my arm and rolled over, propping her head on a hand to stare at me and smile. "You do," she said. "I read it. I know it. And you know how much I love you, too, don't you?"

I nodded, smiling. "Sure."

"We're lucky, you know. The Normals have only words. Poor little Normals. How can they *tell,* with just words? How can they *know?* They're always apart from each other, trying to reach each other and failing. Even when they make love, even when they come, they're always apart. They must be very lonely."

There was something . . . disturbing . . . in that. I looked at Lya, into her bright happy eyes, and thought about it. "Maybe," I said, finally. "But it's not that bad for them. They don't know any other way. And they try, they love too. They bridge the gap sometimes."

"Only a look and a voice, then darkness again and a silence," Lya quoted, her voice sad and tender. "We're luckier, aren't we? We have so much more."

"We're luckier," I echoed. And I reached out to read her too. Her mind was a haze of satisfaction, with a gentle scent of wistful, lonely longing. But there was something else, way down, almost gone now, but still faintly detectable.

I sat up slowly. "Hey," I said. "You're worried about something. And before, when we came in, you were scared. What's the matter?"

"I don't know, really," she said. She sounded puzzled and she *was* puzzled; I read it there. "I *was* scared, but I don't know why. The Joined, I think. I kept thinking about how much they loved me. They didn't even *know* me, but they loved me so much, and they understood—it was almost like what we have. It—I don't know. It bothered me. I mean, I didn't think I could ever be loved that way, except by you. And they were so *close,* so together. I felt kind of lonely, just holding hands and talking. I wanted to be close to *you* that way. After the way they were all sharing and everything, being alone just seemed empty. And frightening. You know?"

"I know," I said, touching her lightly again, with hand and mind. "I understand. We do understand each other. We're together almost as they are, as Normals can't ever be."

Lya nodded, and smiled, and hugged me. We went to sleep in each other's arms.

Dreams again. But again, at dawn, the memory stole away from me. It was all very annoying. The

dream had been pleasant, comfortable. I wanted it back, and I couldn't even remember what it was. Our bedroom, washed by harsh daylight, seemed drab compared to the splendors of my lost vision.

Lya woke after me, with another headache. This time she had the pills on hand, by the bedstand. She grimaced and took one.

"It must be the Shkeen wine," I told her. "Something about it takes a dim view of your metabolism."

She pulled on a fresh coverall and scowled at me. "Ha. We were drinking Veltaar last night, remember? My father gave me my first glass of Veltaar when I was nine. It never gave me headaches before."

"A first!" I said, smiling.

"It's not funny," she said. "It hurts."

I quit kidding, and tried to read her. She was right. It *did* hurt. Her whole forehead throbbed with pain. I withdrew quickly before I caught it too.

"All right," I said. "I'm sorry. The pills will take care of it, though. Meanwhile, we've got work to do."

Lya nodded. She'd never let anything interfere with work yet.

The second day was a day of manhunt. We got off to a much earlier start, had a quick breakfast with Gourlay, then picked up our aircar outside the tower. This time we didn't drop down when we hit Shkeentown. We wanted a human Joined, which meant we had to cover a lot of ground. The city was the biggest I'd ever seen, in area at any rate, and the thousand-odd human cultists were lost among millions of Shkeen. And, of those humans, only about half were actually Joined yet.

So we kept the aircar low, and buzzed up and down the dome-dotted hills like a floating roller-coaster, causing quite a stir in the streets below us. The Shkeen had seen aircars before, of course, but it still had some novelty value, particularly to the kids, who tried to run after us whenever we flashed by. We also panicked a whiner, causing him to upset the cart full of fruit he was dragging. I felt guilty about that, so I kept the car higher afterwards.

We spotted Joined all over the city, singing, eating, walking—and ringing those bells, those eternal bronze bells. But for the first three hours, all we found were Shkeen Joined. Lya and I took turns driving and watching. After the excitement of the previous day, the search was tedious and tiring.

Finally, however, we found something: a large group of Joined, ten of them, clustered around a bread cart behind one of the steeper hills. Two were taller than the rest.

We landed on the other side of the hill and walked around to meet them, leaving our aircar surrounded by a crowd of Shkeen children.

The Joined were still eating when we arrived. Eight of them were Shkeen of various sizes and hues, Greeshka pulsing atop their skulls. The other two were human.

They wore the same long red gowns as the Shkeen, and they carried the same bells. One of them was a big man, with loose skin that hung in flaps, as if he'd lost a lot of weight recently. His hair was white and curly, his face marked by a broad smile and laugh wrinkles around the eyes. The other was a thin, dark weasel of a man with a big hooked nose.

Both of them had Greeshka sucking at their skulls. The parasite riding the weasel was barely a pimple, but the older man had a lordly specimen that dripped down beyond his shoulders and into the back of the gown.

Somehow, this time, it *did* look hideous.

Lyanna and I walked up to them, trying hard to smile, not reading—at least at first. They smiled at us as we approached. Then they waved.

"Hello," the weasel said cheerily when we got there. "I've never seen you. Are you new on Shkea?"

That took me slightly by surprise. I'd been expecting some sort of garbled mystic greeting, or maybe no greeting at all. I was assuming that somehow the human converts would have abandoned their humanity to become mock-Shkeen. I was wrong.

"More or less," I replied. And I read the weasel. He was genuinely pleased to see us, and just bubbled with contentment and good cheer. "We've been hired to talk to people like you." I'd decided to be honest about it.

The weasel stretched his grin farther than I thought it would go. "I am Joined, and happy," he said. "I'll be glad to talk to you. My name is Lester Kamenz. What do you want to know, brother?"

Lya, next to me, was going tense. I decided I'd let her read in depth while I asked questions. "When did you convert to the Cult?"

"Cult?" Kamenz said.

"The Union."

He nodded, and I was struck by the grotesque similarity of his bobbing head and that of the elderly Shkeen we'd seen yesterday. "I have always been in the Union. You are in the Union. All that thinks is in the Union."

"Some of us weren't told," I said. "How about you? When did you realize you were in the Union?"

"A year ago, Old Earth time. I was admitted to the ranks of the Joined only a few weeks ago. The First Joining is a joyful time. I am joyful. Now I will walk the streets and ring my bells until the Final Union."

"What did you do before?"

"Before?" A short vague look. "I ran machines once. I ran computers, in the Tower. But my life was

empty, brother. I did not know I was in the Union, and I was alone. I had only machines, cold machines. Now I am Joined. Now I am"—again he searched—"not alone."

I reached into him, and found the happiness still there, with love. But now there was an ache too, a vague recollection of past pain, the stink of unwelcome memories. Did these fade? Maybe the gift the Greeshka gave its victims was oblivion, sweet mindless rest and end of struggle. Maybe.

I decided to try something. "That thing on your head," I said, sharply. "It's a parasite. It's drinking your blood right now, feeding on it. As it grows, it will take more and more of the things *you* need to live. Finally it will start to eat your tissue. Understand? It will *eat* you. I don't know how painful it will be, but however it feels, at the end you'll be *dead.* Unless you come back to the Tower now, and have the surgeons remove it. Or maybe you could remove it yourself. Why don't you try? Just reach up and pull it off. Go ahead."

I'd expected—what? Rage? Horror? Disgust? I got none of these. Kamenz just stuffed bread in his mouth and smiled at me, and all I read was his love and joy and a little pity.

"The Greeshka does not kill," he said finally. "The Greeshka gives joy and happy Union. Only those who have no Greeshka die. They are . . . alone. Oh, forever alone." Something in his mind trembled with sudden fear, but it faded quickly.

I glanced at Lya. She was stiff and hard-eyed, still reading. I looked back and began to phrase another question. But suddenly the Joined began to ring. One of the Shkeen started it off, swinging his bell up and down to produce a single sharp clang. Then his other hand swung, then the first again, then the second, then another Joined began to ring, then still another, and then they were all swinging and clanging and the noise of their bells was smashing against my ears as the joy and the love and the feel of the bells assaulted my mind once again.

I lingered to savor it. The love there was breathtaking, awesome, almost frightening in its heat and intensity, and there was so much sharing to frolic in and wonder at, such a soothing-calming-exhilarating tapestry of good feeling. Something happened to the Joined when they rang, something touched them and lifted them and gave them a glow, something strange and glorious that mere Normals could not hear in their harsh clanging music. I was no Normal, though. I could hear it.

I withdrew reluctantly, slowly. Kamenz and the other human were both ringing vigorously now, with broad smiles and glowing twinkling eyes that transfigured their faces.

Lyanna was still tense, still reading. Her mouth was slightly open, and she trembled where she stood.

I put an arm around her and waited, listening to the music, patient. Lya continued to read. Finally, after minutes, I shook her gently. She turned and studied me with hard, distant eyes. Then blinked. And her eyes widened and she came back, shaking her head and frowning.

Puzzled, I looked into her head. Strange and stranger. It was a swirling fog of emotion, a dense moving blend of more feelings than I'd care to put a name to. No sooner had I entered than I was lost, lost and uneasy. Somewhere in the fog there was a bottomless abyss lurking to engulf me. At least it felt that way.

"Lya," I said. "What's wrong?"

She shook her head again, and looked at the Joined with a look that was equal parts fear and longing. I repeated my question.

"I—I don't know," she said. "Robb, let's not talk now. Let's go. I want time to think."

"OK," I said. What was going on here? I took her hand and we walked slowly around the hill to the slope where we'd left the car. Shkeen kids were climbing all over it. I chased them, laughing. Lya just stood there, her eyes gone all faraway on me. I wanted to read her again, but somehow I felt it would be an invasion of privacy.

Airborne, we streaked back toward the Tower, riding higher and faster this time. I drove, while Lya sat beside me and stared out into the distance.

"Did you get anything useful?" I asked her, trying to get her mind back on the assignment.

"Yes. No. Maybe." Her voice sounded distracted, as if only part of her was talking to me. "I read their lives; both of them. Kamenz was a computer programmer, as he said. But he wasn't very good. An ugly little man with an ugly little personality, no friends, no sex, no nothing. Lived by himself, avoided the Shkeen, didn't like them at all. Didn't even like people, really. But Gustaffson got through to him, somehow. He ignored Kamenz' coldness, his bitter little cuts, his cruel jokes. He didn't retaliate, you know? After a while, Kamenz came to like Gustaffson, to admire him. They were never really friends in any normal sense, but still Gustaffson was the nearest thing to a friend that Kamenz had."

She stopped suddenly. "So he went over with Gustaffson?" I prompted, glancing at her quickly. Her eyes still wandered.

"No, not at first. He was still afraid, still scared of the Shkeen and terrified of the Greeshka. But later, with Gustaffson gone, he began to realize how empty his life was. He worked all day with people who despised him and machines that didn't care, then sat alone at night reading and watch-

ing holoshows. Not life, really. He hardly touched the people around him. Finally he went to find Gustaffson, and wound up converted. Now . . ."

"Now . . . ?"

She hestitated. "He's happy, Robb," she said. "He really is. For the first time in his life, he's happy. He'd never known love before. Now it fills him."

"You got a lot," I said.

"Yes." Still the distracted voice, the lost eyes. "He was open, sort of. There were levels, but digging wasn't as hard as it usually is—as if his barriers were weakening, coming down almost . . ."

"How about the other guy?"

She stroked the instrument panel, staring only at her hand. "Him? That was Gustaffson . . ."

And that, suddenly, seemed to wake her, to restore her to the Lya I knew and loved. She shook her head and looked at me, and the aimless voice became an animated torrent of words. "Robb, listen, that was *Gustaffson,* he's been Joined over a year now, and he's going on to Final Union within a week. The Greeshka has accepted him, and he wants it, you know? He really does, and—and—oh Robb, he's *dying!"*

"Within a week, according to what you just said."

"No. I mean yes, but that's not what I mean. Final Union isn't death, to him. He believes it, all of it, the whole religion. The Greeshka is his god, and he's going to join it. But before, and now, he was dying. He's got the Slow Plague, Robb. A terminal case. It's been eating at him from inside for over fifteen years now. He got it back on Nightmare, in the swamps, when his family died. That's no world for people, but he was there, the administrator over a research base, a short-term thing. They lived on Thor; it was only a visit, but the ship crashed. Gustaffson got all wild and tried to reach them before the end, but he grabbed a faulty pair of skinthins, and the spores got through. And they were all dead when he got there. He had an awful lot of pain, Robb. From the Slow Plague, but more from the loss. He really loved them, and it was never the same after. They gave him Shkea as a reward, kind of, to take his mind off the crash, but he still thought of it all the time. I could see the picture, Robb. It was vivid. He couldn't forget it. The kids were inside the ship, safe behind the walls, but the life system failed and choked them to death. But his wife—oh, Robb—she took some skinthins and tried to go for help, and outside those *things,* those big wrigglers they have on Nightmare—?"

I swallowed hard, feeling a little sick. "The eater-worms," I said, dully. I'd read about them, and seen holos. I could imagine the picture that Lya'd seen in Gustaffson's memory, and it wasn't at all pretty. I was glad I didn't have her Talent.

"They were still—still—when Gustaffson got there. You know. He killed them all with a screechgun."

I shook my head. "I didn't think things like that really went on."

"No," Lya said. "Neither did Gustaffson. They'd been so—so *happy* before that, before the thing on Nightmare. He loved her, and they were really close, and his career had been almost charmed. He didn't have to go to Nightmare, you know. He took it because it was a challenge, because nobody else could handle it. That gnaws at him, too. And he remembers all the time. He—they—" Her voice faltered. "They thought they were *lucky,*" she said, before falling into silence.

There was nothing to say to that. I just kept quiet and drove, thinking, feeling a blurred, watered-down version of what Gustaffson's pain must have been like. After a while, Lya began to speak again.

"It was all there, Robb," she said, her voice softer and slower and more thoughtful once again. "But he was at peace. He still remembered it all, and the way it had hurt, but it didn't bother him as it had. Only now he was sorry they weren't with him. He was sorry that they died without Final Union. Almost like the Shkeen woman, remember? The one at the Gathering? With her brother?"

"I remember," I said.

"Like that. And his mind was open, too. More than Kamenz, much more. When he rang, the levels all vanished, and everything was right at the surface, all the love and pain and everything. His whole life, Robb. I shared his whole life with him, in an instant. And all his thoughts, too . . . he's seen the caves of Union . . . he went down once, before he converted. I . . ."

More silence, settling over us and darkening the car. We were close to the end of Shkeentown. The Tower slashed the sky ahead of us, shining in the sun. And the lower domes and archways of the glittering human city were coming into view.

"Robb," Lya said. "Land here. I have to think a while, you know? Go back without me. I want to walk among the Shkeen a little."

I glanced at her, frowning. "Walk? It's a long way back to the Tower, Lya."

"I'll be all right. Please. Just let me think a bit."

I read her. The thought fog had returned, denser than ever, laced through with the colors of fear. "Are you sure?" I said. "You're scared, Lyanna. Why? What's wrong? The eater-worms are a long way off."

She just looked at me, troubled. "Please, Robb," she repeated.

I didn't know what else to do, so I landed.

And I, too, thought, as I guided the aircar home. Of what Lyanna had said, and read—of Kamenz and

Gustaffson. I kept my mind on the problem we'd been assigned to crack. I tried to keep it off Lya, and whatever was bothering her. That would solve itself, I thought.

Back at the Tower, I wasted no time. I went straight up to Valcarenghi's office. He was there, alone, dictating into a machine. He shut it off when I entered.

"Hi, Robb," he began. "Where's Lya?"

"Out walking. She wanted to think. I've been thinking, too. And I believe I've got your answer."

He raised his eyebrows, waiting.

I sat down. "We found Gustaffson this afternoon, and Lya read him. I think it's clear why he went over. He was a broken man, inside, however much he smiled. The Greeshka gave him an end to his pain. And there was another convert with him, a Lester Kamenz. He'd been miserable, too, a pathetic lonely man with nothing to live for. Why *shouldn't* he convert? Check out the other converts, and I bet you'll find a pattern. The most lost and vulnerable, the failures, the isolated—those will be the ones that turned to Union."

Valcarenghi nodded. "OK, I'll buy that," he said. "But our psychs guessed that long ago, Robb. Only it's no answer, not really. Sure, the converts on the whole have been a messed-up crew, I won't dispute that. But why turn to the Cult of the Union? The psychs can't answer that. Take Gustaffson now. He was a strong man, believe me. I never knew him personally, but I knew his career. He took some rough assignments, generally for the hell of it, and beat them. He could have had the cushy jobs, but he wasn't interested. I've heard about the incident on Nightmare. It's famous, in a warped sort of way. But Phil Gustaffson wasn't the sort of man to be beaten, even by something like that. He snapped out of it very quickly, from what Nelse tells me. He came to Shkea and really set the place in order, cleaning up the mess that Rockwood had left. He pushed through the first real trade contract we ever got, *and* he made the Shkeen understand what it meant, which isn't easy.

"So here he is, this competent, talented man, who's made a career of beating tough jobs and handling men. He's gone through a personal nightmare, but it hasn't destroyed him. He's as tough as ever. And suddenly he turns to the Cult of the Union, signs up for a grotesque suicide. Why? For an end to his pain, you say? An interesting theory, but there are other ways to end pain. Gustaffson had years between Nightmare and the Greeshka. He never ran away from pain then. He didn't turn to drink, or drugs, or any of the usual outs. He didn't head back to Old Earth to have a psi-psych clean up his memories—and believe me, he could've gotten it paid for, if he'd

wanted it. The colonial office would have done anything for him, after Nightmare. He went on, swallowed his pain, rebuilt. Until suddenly he converts.

"His pain made him more vulnerable, yes, no doubt of it. But something else brought him over—something that Union offered, something he couldn't get from wine or memory wipe. The same's true of Kamenz, and the others. They had other outs, other ways to vote no on life. They passed them up. But they chose Union. You see what I'm getting at?"

I did, of course. My answer was no answer at all, and I realized it. But Valcarenghi was wrong too, in parts.

"Yes," I said. "I guess we've still got some reading to do." I smiled wanly. "One thing, though. Gustaffson hadn't really beaten his pain, not ever. Lya was very clear on that. It was inside him all the time, tormenting him. He just never let it come out."

"That's victory, isn't it?" Valcarenghi said. "If you bury your hurts so deep that no one can tell you have them?"

"I don't know. I don't think so. But . . . anyway, there was more. Gustaffson has the Slow Plague. He's dying. He's been dying for years."

Valcarenghi's expression flickered briefly. "That I didn't know, but it just bolsters my point. I've read that some eighty percent of Slow Plague victims opt for euthanasia, if they happen to be on a planet where it's legal. Gustaffson was a planetary administrator. He could have *made* it legal. If he passed up suicide for all those years, why choose it now?"

I didn't have an answer for that. Lyanna hadn't given me one, if she had one. I didn't know where we could find one, either, unless . . .

"The caves," I said suddenly. "The caves of Union. We've got to witness a Final Union. There must be something about it, something that accounts for the conversions. Give us a chance to find out what it is."

Valcarenghi smiled. "All right," he said. "I can arrange it. I expected it would come to that. It's not pleasant, though, I'll warn you. I've gone down myself, so I know what I'm talking about."

"That's OK," I told him. "If you think reading Gustaffson was any fun, you should have seen Lya when she was through. She's out now trying to walk it off." That, I'd decided, must have been what was bothering her. "Final Union won't be any worse than those memories of Nightmare, I'm sure."

"Fine, then. I'll set it up for tomorrow. I'm going with you, of course. I don't want to take any chances on anything happening to you."

I nodded. Valcarenghi rose. "Good enough," he said. "Meanwhile, let's think about more inter-

esting things. You have any plans for dinner?"

We wound up eating at a mock-Shkeen restaurant run by humans, in the company of Gourlay and Laurie Blackburn. The talk was mostly social noises—sports, politics, art, old jokes, that sort of thing. I don't think there was a mention of the Shkeen or the Greeshka all evening.

Afterwards, when I got back to our suite, I found Lyanna waiting for me. She was in bed, reading one of the handsome volumes from our library, a book of Old Earth poetry. She looked up when I entered.

"Hi," I said. "How was your walk?"

"Long." A smile creased her pale, small face, then faded. "But I had time to think. About this afternoon, and yesterday, and about the Joined. And us."

"Us?"

"Robb, do you love me?" The question was delivered almost matter-of-factly, in a voice full of question. As if she didn't know. As if she really didn't know.

I sat down on the bed and took her hand and tried to smile. "Sure," I said. "You know that, Lya."

"I did. I do. You love me, Robb, really you do. As much as a human can love. But . . ." She stopped. She shook her head and closed her

due to conditions beyond all controls . . .

. . . The price of Analog will increase next month. For years we've struggled to hold the line on price, but the tide of inflation has finally caught up with us. Rising costs of printing, paper, freight, postage, et cetera, have forced us to raise the price to 75¢ per issue. Subscription rates will be $7.50 per year (12 issues).

The conditions that *are* under our control include the high quality of Analog's stories, articles, features and artwork. These will continue to be the best in the field. *And* there will be a few surprises coming up over the next several months . . . including a special issue on the Velikovsky controversy. Watch for it!

book and sighed. "But we're still apart, Robb. We're still apart."

"What *are* you talking about?"

"This afternoon. I was so confused afterwards, and scared. I wasn't sure why, but I've thought about it. When I was reading, Robb—I was in there, with the Joined, sharing them and their love. I really was. And I didn't want to come out. I didn't want to leave them, Robb. When I did, I felt so isolated, so cut off."

"That's your fault," I said. "I tried to talk to you. You were too busy thinking."

"Talking? What good is talking? It's communication, I guess, but is it *really?* I used to think so, before they trained my Talent. After that, reading seemed to be the real communication, the real way to reach somebody else, somebody like you. But now I don't know. The Joined—when they ring—they're so *together,* Robb. All linked. Like us when we make love, almost. And they love each other, too. And they love us, so intensely. I felt—I don't know. But Gustaffson loves me as much as you do. No. He loves me more."

Her face was white as she said that, her eyes wide, lost, lonely. And me, I felt a sudden chill, like a cold wind blowing through my soul. I didn't say anything. I only looked at her, and wet my lips. And bled.

She saw the hurt in my eyes, I guess. Or read it. Her hand pulled at mine, caressed it. "Oh, Robb. Please. I don't mean to hurt you. It's not you. It's all of us. What do *we* have, compared to *them?*"

I don't know what you're talking about, Lya." Half of me suddenly wanted to cry. The other half wanted to shout. I stifled both halves, and kept my voice steady. But inside I wasn't steady, I wasn't steady at all.

"Do you love me, Robb?" Again. Wondering.

"Yes!" Fiercely. A challenge.

"What does that mean?" she said.

"You know what it means," I said. "Dammit, Lya, *think!* Remember all we've had, all we've shared together. *That's* love, Lya. It is. We're the lucky ones, remember? You said that yourself. The Normals have only a touch and a voice, then back to their darkness. They can barely find each other. They're alone. Always. Groping. Trying, over and over, to climb out of their isolation booths, and failing, over and over. But not us, we found the way, we know each other as much as any human beings ever can. There's nothing I wouldn't tell you, or share with you. I've said that before, and you know it's true, you can read it in me. *That's* love, dammit. *Isn't it?*"

"I don't know," she said, in a voice so sadly baffled. Soundlessly, without even a sob, she began to cry. And while the tears ran in lonely paths down her cheeks, she

talked. "Maybe that's love. I always thought it was. But now I don't know. If what we have is love, what was it I felt this afternoon, what was it I touched and shared in? Oh, Robb. I love you too. You know that. I try to share with you. I want to share what I read, what it was like. But I can't. We're cut off. I can't make you understand. I'm here and you're there and we can touch and make love and talk, but we're still apart. You see? You see? I'm alone. And this afternoon, I *wasn't.*"

"You're not alone, dammit," I said suddenly. "I'm here." I clutched her hand tightly. "Feel? Hear? You're not alone!"

She shook her head, and the tears flowed on. "You don't understand, see? And there's no way I can make you. You said we know each other as much as any human beings ever can. You're right. But how much can human beings know each other? Aren't all of them cut off, really? Each alone in a big dark empty universe? We only trick ourselves when we think that someone else is there. In the end, in the cold lonely end, it's only us, by ourselves, in the blackness. Are you there, Robb? How do I know? Will you die with me, Robb? Will we be together then? Are we together *now?* You say we're luckier than the Normals. I've said it too. They have only a touch and voice, right? How many times have I quoted that? But what do *we* have? A touch and two voices, maybe. It's not enough anymore. I'm scared. Suddenly I'm scared."

She began to sob. Instinctively I reached out to her, wrapped her in my arms, stroked her. We lay back together, and she wept against my chest. I read her, briefly, and I read her pain, her sudden loneliness, her hunger, all aswirl in a darkening mindstorm of fear. And, though I touched her and caressed her and whispered—over and over—that it would be all right, that I was here, that she wasn't alone, I knew that it would not be enough. Suddenly there was a gulf between us, a great dark yawning thing that grew and grew, and I didn't know how to bridge it. And Lya, my Lya, was crying, and she needed me. And I needed her, but I couldn't get to her.

Then I realized that I was crying too.

We held each other, in silent tears, for what must have been an hour. But finally the tears ran out. Lya clutched her body to me so tightly I could hardly breathe, and I held her just as tightly.

"Robb," she whispered. "You said—you said we really know each other. All those times you've said it. And you say, sometimes, that I'm *right* for you, that I'm perfect."

I nodded, wanting to believe. "Yes. You are."

"No," she said, choking out the word, forcing it into the air, fighting herself to say it. "It's not *so.* I

read you, yes. I can hear the words rattling around in your head as you fit a sentence together before saying it. And I listen to you scold yourself when you've done something stupid. And I see memories, some memories, and live through them with you. But it's all on the surface, Robb, all on the top. Below it, there's more, more of *you.* Drifting half-thoughts I don't quite catch. Feelings I can't put a name to. Passions you suppress, and memories even you don't know you have. Sometimes I can get to that level. Sometimes. If I really fight, if I drain myself to exhaustion. But when I get there, I know—I *know*—that there's another level below *that.* And more and more, on and on, down and down. I can't reach them, Robb, though they're part of you. I don't know you, I can't know you. You don't even know yourself, see? And me, do you know me? No. Even less. You know what I tell you, and I tell you the truth, but maybe not all. And you read my feelings, my surface feelings—the pain of a stubbed toe, a quick flash of annoyance, the pleasure I get when you're in me. Does that mean you know me? What of *my* levels, and levels? What about the things I don't even know myself? Do *you* know them? How, Robb, how?"

She shook her head again, with that funny little gesture she had whenever she was confused. "And you say I'm perfect, and that you love me. I'm so right for you. But *am* I? Robb, *I read your thoughts.* I know when you want me to be sexy, so I'm sexy. I see what turns you on, so I do it. I know when you want me to be serious, and when you want me to joke. I know what kind of jokes to tell, too. Never the cutting kind, you don't like that, to hurt or see people hurt. You laugh *with* people not *at* them, and I laugh with you, and love you for your tastes. I know when you want me to talk, and when to keep quiet. I know when you want me to be your proud tigress, your tawny telepath, and when you want a little girl to shelter in your arms. And I *am* those things, Robb, because you want me to be, because I love you, because I can feel the joy in your mind at every *right* thing that I do. I never set out to do it that way, but it happened. I didn't mind, I don't mind. Most of the time it wasn't even conscious. You do the same thing, too. I read it in you. You can't read as I do, so sometimes you guess wrong—you come on witty when I want silent understanding, or you act the strong man when I need a boy to mother. But you get it right sometimes, too. And you *try,* you always try.

"But is it really *you?* Is it really *me?* What if I wasn't perfect, you see, if I was just myself, with all my faults and the things you don't like out in the open? Would you love me *then?* I don't know. But

Gustaffson would, and Kamenz. I know that, Robb. I saw it. I know *them.* Their levels . . . vanished. I *KNOW* them, and if I went back I could share with them, more than with you. And they know me, the real me, all of me, I think. And they love me. You see? *You see?*"

Did I see? I don't know. I was confused. Would I love Lya if she was "herself"? But what was "herself"? How was it different from the Lya I knew? I thought I loved Lya and would always love Lya—but what if the real Lya wasn't like my Lya? *What* did I love? The strange abstract concept of a human being, or the flesh and voice and personality that I thought of as Lya? I didn't know. I didn't know who Lya was, or who I was, or what the hell it all meant. And I was scared. Maybe I couldn't feel what she had felt that afternoon. But I knew what she was feeling then. I was alone, and I needed someone.

"Lya," I called. "Lya, let's try. We don't have to give up. We can reach each other. There's a way, our way. We've done it before. Come, Lya, come with me, come to me."

As I spoke, I undressed her, and she responded and her hands joined mine. When we were nude, I began to stroke her, slowly, and she me. Our minds reached out to each other. Reached and probed as never before. I could feel her, inside my head, digging. Deeper and deeper. Down. And I opened myself to her, I surrendered, all the petty little secrets I had kept even from her, or tried to, now I yielded up to her, everything I could remember, my triumphs and shames, the good moments and the pain, the times I'd hurt someone, the times I'd been hurt, the long crying sessions by myself, the fears I wouldn't admit, the prejudices I fought, the vanities I battled when the time struck, the silly boyish sins. All. Everything. I buried nothing. I hid nothing. I gave myself to her, to Lya, to *my* Lya. She had to know me.

And so too she yielded. Her mind was a forest through which I roamed, hunting down wisps of emotion, the fear and the need and the love at the top, the fainter things beneath, the half-formed whims and passions still deeper into the woods. I don't have Lya's Talent, I read only feelings, never thoughts. But I read thoughts then, for the first and only time, thoughts she threw at me because I'd never seen them before. I couldn't read much, but some I got.

And as her mind opened to mine, so did her body. I entered her, and we moved together, bodies one, minds entwined, as close as human beings can join. I felt pleasure washing over me in great glorious waves, my pleasure, her pleasure, both together building on each other, and I rode the crest for an eternity as it approached a far distant shore. And finally as it

smashed into that beach, we came together, and for a second—for a tiny, fleeting second—I could not tell which orgasm was mine, and which was hers.

But then it passed. We lay, bodies locked together, on the bed. In the starlight. But it was not a bed. It was the beach, the flat black beach, and there were no stars above. A thought touched me, a vagrant thought that was not mine. Lya's thought. We were on a plain, she was thinking, and I saw that she was right. The waters that had carried us here were gone, receded. There was only a vast flat blackness stretching away in all directions, with dim ominous shapes moving on either horizon. *We are here as on a darkling plain,* Lya thought. And suddenly I knew what those shapes were, and what poem she had been reading.

We slept.

I woke, alone.

The room was dark. Lya lay on the other side of the bed, curled up, still asleep. It was late, near dawn I thought. But I wasn't sure. I was restless.

I got up and dressed in silence. I needed to walk somewhere, to think, to work things out. Where, though?

There was a key in my pocket. I touched it when I pulled on my tunic, and remembered. Valcarenghi's office. It would be locked and deserted at this time of night. And the view might help me think.

I left, found the tubes, and shot up, up, up to the apex of the Tower, the top of man's steel challenge to the Shkeen. The office was unlit, the furniture dark shapes in the shadows. There was only the starlight. Shkea is closer to the galactic center than Old Earth, or Baldur. The stars are a fiery canopy across the night sky. Some of them are very close, and they burn like red and blue-white fires in the awesome blackness above. In Valcarenghi's office, all the walls are glass, I went to one, and looked out. I wasn't thinking. Just feeling. And I felt cold and lost and little.

Then there was a soft voice behind me saying hello. I barely heard it.

I turned away from the window, but other stars leaped at me from the far walls. Laurie Blackburn sat in one of the low chairs, concealed by the darkness.

"Hello," I said. "I didn't mean to intrude. I thought no one would be here."

She smiled. A radiant smile in a radiant face, but there was no humor in it. Her hair fell in sweeping auburn waves past her shoulders, and she was dressed in something long and gauzy. I could see her gentle curves through its folds, and she made no effort to hide herself.

"I come up here a lot," she said. "At night, usually. When Dino's asleep. It's a good place to think."

"Yes," I said, smiling. "My thoughts, too."

"The stars are pretty, aren't they?"

"Yes."

"I think so. I—" Hesitation. Then she rose and came to me. "Do you love Lya?" she said.

A hammer of a question. Timed terribly. But I handled it well, I think. My mind was still on my talk with Lya. "Yes," I said. "Very much. Why?"

She was standing close to me, looking at my face, and past me, out to the stars. "I don't know. I wonder about love, sometimes. I love Dino, you know. He came here two months ago, so we haven't known each other long. But I love him already. I've never known anybody like him. He's kind, and considerate, and he does everything well. I've never seen him fail at anything he tried. Yet he doesn't seem driven, like some men. He wins so easily. He believes in himself a lot, and that's attractive. He's given me anything I could ask for, everything."

I read her, caught her love and worry, and guessed. "Except himself," I said.

She looked at me, startled. Then she smiled. "I forgot. You're a Talent. Of course you know. You're right. I don't know what I worry about, but I do worry. Dino is so perfect, you know. I've told him—well, everything. All about me and my life. And he listens and understands. He's always receptive, he's there when I need him. But—"

"It's all one way," I said. It was a statement. I knew.

She nodded. "It's not that he keeps secrets. He doesn't. He'll answer any question I ask. But the answers mean nothing. I ask him what he fears, and he says nothing, and makes me believe it. He's very rational, very calm. He never gets angry, he never has. I asked him. He doesn't hate people, he thinks hate is bad. He's never felt pain, either, or he *says* he hasn't. Emotional pain, I mean. Yet he understands me when I talk about my life. Once he said his biggest fault was laziness. But he's not lazy at all, I know that. Is he really that perfect? He tells me he's always sure of himself, because he *knows* he's good, but he smiles when he says it, so I can't even accuse him of being vain. He says he believes in God, but he never talks about it. If you try to talk seriously, he'll listen patiently, or joke with you, or lead the conversation away. He says he loves me, but—"

I nodded. I knew what was coming.

It came. She looked up at me, eyes begging. "You're a Talent," she said. "You've read him, haven't you? You know him? Tell me. Please tell me."

I was reading her. I could see how much she needed to know, how much she worried and feared, how much she loved. I couldn't lie to her. Yet it was hard to give her the answer I had to.

"I've read him," I said. Slowly. Carefully. Measuring out my words like precious fluids. "And you, you too. I saw your love, on that first night, when we ate together."

"And Dino?"

My words caught in my throat. "He's—funny, Lya said once. I can read his surface emotions easily enough. Below that, nothing. He's very self-contained, walled off. Almost as if his only emotions are the ones he—*allows* himself to feel. I've felt his confidence, his pleasure. I've felt worry too, but never real fear. He's very affectionate toward you, very protective. He enjoys feeling protective."

"Is that all?" So hopeful. It hurt.

"I'm afraid it is. He's walled off, Laurie. He needs himself, only himself. If there's love in him, it's behind that wall , hidden. I can't read it. He thinks a lot of you, Laurie. But love—well, it's different. It's stronger and more unreasoning and it comes in crashing floods. And Dino's not like that, at least not out where I can read."

"Closed," she said. "He's closed to me. I opened myself to him, totally. But he didn't. I was always afraid—even when he was with me, I felt sometimes that he wasn't there at all—"

She sighed. I read her despair, her welling loneliness. I didn't know what to do. "Cry if you like," I told her, inanely. "Sometimes it helps. I know. I've cried enough in my time."

She didn't cry. She looked up, and laughed lightly. "No," she said. "I can't. Dino taught me never to cry. He said tears never solve anything."

A sad philosophy. Tears don't solve anything, maybe, but they're part of being human. I wanted to tell her so, but instead I just smiled at her.

She smiled back, and cocked her head. "You cry," she said suddenly, in a voice strangely delighted. "That's funny. That's more of an admission than I ever heard from Dino, in a way. Thank you, Robb. Thank you."

And Laurie stood on her toes and looked up, expectant. And I could read what she expected. So I took her and kissed her, and she pressed her body hard against mine. And all the while I thought of Lya, telling myself that she wouldn't mind, that she'd be proud of me, that she'd understand.

Afterwards, I stayed up in the office alone to watch the dawn come up. I was drained, but somehow content. The light that crept over the horizon was chasing the shadows before it, and suddenly all the fears that had seemed so threatening in the night were silly, unreasoning. We'd bridged it, I thought—Lya and I. Whatever it was, we'd handled it, and today we'd handle the Greeshka with the same ease, together.

When I got back to our room, Lya was gone.

"We found the aircar in the middle of Shkeentown," Valcarenghi was saying. He was cool, precise, reassuring. His voice told me, without words, that there was nothing to worry about. "I've got men out looking for her. But Shkeentown's a big place. Do you have any idea where she might have gone?"

"No," I said, dully. "Not really. Maybe to see some more Joined. She seemed—well, almost obsessed by them. I don't know."

"Well, we've got a good police force. We'll find her, I'm certain of that. But it may take a while. Did you two have a fight?"

"Yes. No. Sort of, but it wasn't a real fight. It was strange."

"I see," he said. But he didn't. "Laurie tells me you came up here last night, alone."

"Yes. I needed to think."

"All right," said Valcarenghi. "So let's say Lya woke up, decided she wanted to think too. You came up here. She took a ride. Maybe she just wants a day off to wander around Shkeentown. She did something like that yesterday, didn't she?"

"Yes."

"So she's doing it again. No problem. She'll probably be back well before dinner." He smiled.

"Why did she go without telling me, then? Or leaving a note, or *something?*"

"I don't know. It's not important."

Wasn't it, though? *Wasn't it?* I sat in the chair, head in my hands and a scowl on my face, and I was sweating. Suddenly I was very much afraid, of what I didn't know. I should never have left her alone, I was telling myself. While I was up here with Laurie, Lyanna woke alone in a darkened room, and—and—and *what?* And left.

"Meanwhile, though," Valcarenghi said, "we've got work to do. The trip to the caves is all set."

I looked up, disbelieving. "The caves? I can't go there, not now, not alone."

He gave a sigh of exasperation, exaggerated for effect. "Oh, come now, Robb. It's not the end of the world. Lya will be all right. She seemed to be a perfectly sensible girl, and I'm sure she can take care of herself. Right?"

I nodded.

"Meanwhile, we'll cover the caves. I still want to get to the bottom of this."

"It won't do any good," I protested. "Not without Lya. She's the major Talent. I—I just read emotions. I can't get down deep, as she can. I won't solve anything for you."

He shrugged. "Maybe not. But the trip is on, and we've got nothing to lose. We can always make a second run after Lya comes back. Besides, this should do you good, get your mind off this other business. There's nothing you can do for Lya now. I've got every avail-

able man out searching for her, and if they don't find her you certainly won't. So there's no sense dwelling on it. Just get back into action, keep busy." He turned, headed for the tube. "Come. There's an aircar waiting for us. Nelse will go too."

Reluctantly, I stood. I was in no mood to consider the problems of the Shkeen, but Valcarenghi's arguments made a certain amount of sense. Besides which, he'd hired Lyanna and me, and we still had obligations to him. I could try anyway, I thought.

On the ride out, Valcarenghi sat in the front with the driver, a hulking police sergeant with a face chiseled out of granite. He'd selected a police car this time so we could keep posted on the search for Lya. Gourlay and I were in the back seat together. Gourlay had covered our laps with a big map, and he was telling me about the caves of Final Union.

"Theory is the caves are the original home of the Greeshka," he said. "Probably true, makes sense. Greeshka are a lot bigger there. You'll see. The caves are all through the hills, away from our part of Shkeentown, where the country gets wilder. A regular little honeycomb. Greeshka in every one, too. Or so I've heard. Been in a few myself, Greeshka in all of *them.* So I believe what they say about the rest. The city, the sacred city, well, it was probably built *because* of the caves. Shkeen come here from all over the continent, you know, for Final Union. Here, this is the cave region." He took out a pen, and made a big circle in red near the center of the map. It was meaningless to me. The map was getting me down. I hadn't realized that the Shkeen city was so *huge.* How the hell could they find anyone who didn't want to be found?

Valcarenghi looked back from the front seat. "The cave we're going to is a big one, as these places go. I've been there before. There's no formality about Final Union, you understand. The Shkeen just pick a cave, and walk in, and lie down on top of the Greeshka. They'll use whatever entrance is most convenient. Some of them are no bigger than sewer pipes, but if you went in far enough, theory says you'd run into a Greeshka, setting back in the dark and pulsing away. The biggest caves are lighted with torches, like the Great Hall, but that's just a frill. It doesn't play any real part in the Union."

"I take it we're going to one of them?" I said.

Valcarenghi nodded. "Right. I figured you'd want to see what a mature Greeshka is like. It's not pretty, but it's educational. So we need lighting."

Gourlay resumed his narrative then, but I tuned him out. I felt I knew quite enough about the Shkeen and the Greeshka, and I

was still worried about Lyanna. After a while he wound down, and the rest of the trip was in silence. We covered more ground than we ever had before. Even the Tower—our shining steel landmark—had been swallowed by the hills behind us.

The terrain got rougher, rockier, and more overgrown, and the hills rose higher and wilder. But the domes went on and on and on, and there were Shkeen everywhere. Lya could be down there, I thought, lost among those teeming millions. Looking for what? Thinking what?

Finally we landed, in a wooded valley between two massive, rock-studded hills. Even here there were Shkeen, the red-brick domes rising from the undergrowth among the stubby trees. I had no trouble spotting the cave. It was halfway up one of the slopes, a dark yawn in the rock face, with a dusty road winding up to it.

We set down in the valley and climbed that road. Gourlay ate up the distance with long, gawky strides, while Valcarenghi moved with an easy, untiring grace, and the policeman plodded on stolidly. I was the straggler. I dragged myself up, and I was half-winded by the time we got to the cave mouth.

If I'd expected cave paintings, or an altar, or some kind of nature-temple, I was sadly disappointed. It was an ordinary cave, with damp stone walls and low ceilings and cold, wet air. Cooler than most of Shkea, and less dusty, but that was about it. There was one long, winding passage through the rock, wide enough for the four of us to walk abreast yet low enough so Gourlay had to stoop. Torches were set along the walls at regular intervals, but only every fourth one or so was lit. They burned with an oily smoke that seemed to cling to the top of the cave and drift down into the depths before us. I wondered what was sucking it in.

After about ten minutes of walking, most of it down a barely perceptible incline, the passage led us out into a high, brightly-lit room, with a vaulting stone roof that was stained sooty by torch smoke. In the room, the Greeshka.

Its color was a dull brownish-red, like old blood, not the bright near-translucent crimson of the small creatures that clung to the skulls of the Joined. There were spots of black, too, like burns or soot stains on the vast body. I could barely see the far side of the cave; the Greeshka was too huge, it towered above us so that there was only a thin crack between it and the roof. But it sloped down abruptly halfway across the chamber, like an immense jellied hill, and ended a good twenty feet from where we stood. Between us and the great bulk of the Greenshka was a forest of hanging, dangling red strands, a living cobweb of Greeshka tissue that came almost to our faces.

And it pulsed. As one organism.

Even the strands kept time, widening and then contracting again, moving to a silent beat that was one with the great Greeshka behind them.

My stomach churned, but my companions seemed unmoved. They'd seen this before. "Come," Valcarenghi said, switching on a flashlight he'd brought to augment the torchlight. The light, twisting around the pulsing web, gave the illusion of some weird haunted forest. Valcarenghi stepped into that forest. Lightly. Swinging the light and brushing aside the Greeshka.

Gourlay followed him, but I recoiled. Valcarenghi looked back and smiled. "Don't worry," he said. "The Greeshka takes hours to attach itself, and it's easily removed. It won't grab you if you stumble against it."

I screwed up my courage, reached out, and touched one of the living strands. It was soft and wet, and there was a slimy feel to it. But that was all. It broke easily enough. I walked through it, reaching before me and bending and breaking the web to clear my path. The policeman walked silently behind me.

Then we stood on the far side of the web, at the foot of the great Greeshka. Valcarenghi studied it for a second, then pointed with his flashlight. "Look," he said. "Final Union."

I looked. His beam had thrown a pool of light around one of the dark spots, a blemish on the reddish hulk. I looked closer. There was a head in the blemish. Centered in the dark spot, with just the face showing, and even that covered by a thin reddish film. But the features were unmistakable. An elderly Shkeen, wrinkled and big-eyed, his eyes closed now. But smiling. Smiling.

I moved closer. A little lower and to the right, a few fingertips hung out of the mass. But that was all. Most of the body was already gone, sunken into the Greenshka, dissolved or dissolving. The old Shkeen was dead, and the parasite was digesting his corpse.

"Every one of the dark spots is a recent Union," Valcarenghi was saying, moving his light around like a pointer. "The spots fade in time, of course. The Greeshka is growing steadily. In another hundred years it will fill this chamber, and start up the passageway."

Then there was a rustle of movement behind us. I looked back. Someone else was coming through the web.

She reached us soon, and smiled. A Shkeen woman, old, naked, breasts hanging past her waist. Joined, of course. Her Greeshka covered most of her head and hung lower than her breasts. It was still bright and translucent from its time in the sun. You could see through it, to where it was eating the skin off her back.

"A candidate for Final Union," Gourlay said.

"This is a popular cave," Valcarenghi added in a low, sardonic voice.

The woman did not speak to us, nor us to her. Smiling, she walked past us. And lay down on the Greeshka.

The little Greeshka, the one that rode her back, seemed almost to dissolve on contact, melting away into the great cave creature, so the Shkeen woman and the great Greeshka were joined as one. After that, nothing. She just closed her eyes, and lay peacefully, seemingly asleep.

"What's happening?" I asked.

"Union," said Valcarenghi. "It'll be an hour before you'd notice anything, but the Greeshka is closing over her even now, swallowing her. A response to her body heat, I'm told. In a day she'll be buried in it. In two, like him—" The flash found the half-dissolved face above us.

"Can you read her?" Gourlay suggested. "Maybe that'd tell us something."

"All right," I said, repelled but curious. I opened myself. And the mindstorm hit.

But it's wrong to call it a mindstorm. It was immense and awesome and intense, searing and blinding and choking. But it was peaceful too, and gentle with a gentleness that was more violent than human hate. It shrieked soft shrieks and siren calls and pulled at me seductively, and it washed over me in crimson waves of passion, and drew me to it. It filled me and emptied me all at once. And I heard the bells somewhere, clanging a harsh bronze song, a song of love and surrender and togetherness, of joining and union and never being alone.

Storm, mindstorm, yes, it was that. But it was to an ordinary mindstorm as a supernova is to a hurricane, and its violence was the violence of love. It loved me, that mindstorm, and it wanted me, and its bells called to me, and sang its love, and I reached to it and touched, wanting to be with it, wanting to link, wanting never to be alone again. And suddenly I was on the crest of a great wave once again, a wave of fire that washed across the stars forever, and this time I knew the wave would never end, this time I would not be alone afterwards upon my darkling plain.

But with that phrase I thought of Lya.

And suddenly I was struggling, fighting it, battling back against the sea of sucking love. I ran, ran, *ran, RAN* . . . and closed my minddoor and hammered shut the latch and let the storm flail and howl against it while I held it with all my strength, resisting. Yet the door began to buckle and crack.

I screamed. The door smashed

open, and the storm whipped in and clutched at me, whirled me out and around and around. I sailed up to the cold stars but they were cold no longer, and I grew bigger and bigger until I *was* the stars and they were me, and I was Union, and for a single solitary glittering instant I was the universe.

Then nothing.

I woke up back in my room, with a headache that was trying to tear my skull apart. Gourlay was sitting on a chair reading one of our books. He looked up when I groaned.

Lya's headache pills were still on the bedstand. I took one hastily, then struggled to sit up in bed.

"You all right?" Gourlay asked.

"Headache," I said, rubbing my forehead. It *throbbed*, as if it was about to burst. Worse than the time I'd peered into Lya's pain. "What happened?"

He stood up. "You scared the hell out of us. After you began to read, all of a sudden you started trembling. Then you walked right into the goddamn Greeshka. And you screamed. Dino and the sergeant had to drag you out. You were stepping right in the thing, and it was up to your knees. Twitching, too. Weird. Dino hit you, knocked you out."

He shook his head, started for the door. "Where are you going?" I said.

"To sleep," he said. "You've been out for eight hours or so. Dino asked me to watch you till you came to. OK, you came to. Now get some rest, and I will too. We'll talk about it tomorrow."

"I want to talk about it now."

"It's late," he said, as he closed the bedroom door. I listened to his footsteps on the way out. And I'm sure I heard the outer door lock. Somebody was clearly afraid of Talents who steal away into the night. I wasn't going anywhere.

I got up and went out for a drink. There was Veltaar chilling. I put away a couple of glasses quick, and ate a light snack. The headache began to fade. Then I went back to the bedroom, turned off the light and cleared the glass, so the stars would all shine through. Then back to sleep.

But I didn't sleep, not right away. Too much had happened. I had to think about it. The headache first, the incredible headache that ripped at my skull. Like Lya's. But Lya hadn't been through what I had. Or had she? Lya was a major Talent, much more sensitive than I was, with a greater range. Could that mindstorm have reached *this* far, over miles and miles? Late at night, when humans and Shkeen were sleeping and their thoughts dim? Maybe. And maybe my half-remembered dreams were pale reflections of whatever she had felt the same nights. But my dreams had been pleasant. It was

waking that bothered me, waking and not remembering.

But again, had I had this headache when I slept? Or when I woke?

What the hell had happened? What was that thing, that reached me there in the cave, and pulled me to it? The Greeshka? It had to be. I hadn't even time to focus on the Shkeen woman, it *had* to be the Greeshka. But Lyanna had said that Greeshka had no minds, not even a yes-I-live . . .

It all swirled around me, questions on questions on questions, and I had no answers. I began to think of Lya then, to wonder where she was and why she'd left me. Was this what she had been going through? Why hadn't I understood? I missed her then. I needed her beside me, and she wasn't there. I was alone, and very aware of it.

I slept.

Long darkness then, but finally a dream, and finally I remembered. I was back on the plain again, the infinite darkling plain with its starless sky and black shapes in the distance, the plain Lya had spoken of so often. It was from one of her favorite poems. I was alone, forever alone, and I knew it. That was the nature of things. I was the only reality in the universe, and I was cold and hungry and frightened, and the shapes were moving toward me, inhuman and inexorable. And there was no one to call to, no one to turn to, no one to hear my cries. There never had been anyone. There never would be anyone.

Then Lya came to me.

She floated down from the starless sky, pale and thin and fragile, and stood beside me on the plain. She brushed her hair back with her hand, and looked at me with glowing wide eyes, and smiled. And I knew it was no dream. She was with me, somehow. We talked.

Hi, Robb.

Lya? Hi, Lya. Where are you? You left me.

I'm sorry. I had to. You understand, Robb. You have to. I didn't want to be here anymore, ever, in this place, this awful place. I would have been, Robb. Men are always here, but for brief moments.

A touch and a voice?

Yes, . Robb. Then darkness again, and a silence. And the darkling plain.

You're mixing two poems, Lya. But it's OK. You know them better than I do. But aren't you leaving out something? The earlier part, "Ah love, let us be true . . ."

Oh, Robb.

Where are you?

I'm—everywhere. But mostly in a cave. I was ready, Robb. I was already more open than the rest. I could skip the Gathering, and the Joining. My Talent made me used to sharing. It took me.

Final Union?

Yes.

Oh, Lya.

Robb. Please. Join us, join me. It's happiness, you know? Forever and forever, and belonging and sharing and being together. I'm in love, Robb, I'm in love with a billion billion people, and I know all of them better than I ever knew you, and they know me, all of me, and they love me. And it will last forever. Me. Us. The Union. I'm still me, but I'm them too, you see? And they're me. The Joined, the reading, opened me, and the Union called to me every night, because it loved me, you see? Oh, Robb, join us, join us. I love you.

The Union. The Greeshka, you mean. I love you, Lya. Please come back. It can't have absorbed you already. Tell me where you are. I'll come to you.

Yes, come to me. Come anywhere, Robb. The Greeshka is all one, the caves all connect under the hills, the little Greeshka are all part of the Union. Come to me and join me. Love me as you said you did. Join me. You're so far away, I can hardly reach you, even with the Union. Come and be one with us.

No. I will not be eaten. Please, Lya, tell me where you are.

Poor Robb. Don't worry, love. The body isn't important. The Greeshka needs it for nourishment, and we need the Greeshka. But, oh Robb, the Union isn't just the Greeshka, you see? The Greeshka isn't important, it doesn't even have a mind, it's just the link, the medium, the Union is the Shkeen. A million billion billion Shkeen, all the Shkeen that have lived and Joined in fourteen thousand years, all together and loving and belonging, immortal. It's beautiful, Robb, it's more than we had, much more, and we were the lucky ones, remember? We were! But this is better.

Lya. My Lya. I loved you. This isn't for you, this isn't for humans. Come back to me.

This isn't for humans? Oh, it IS! It's what humans have always been looking for, searching for, crying for on lonely nights. It's love, Robb, real love, and human love is only a pale imitation. You see?

No.

Come, Robb. Join. Or you'll be alone forever, alone on the plain, with only a voice and a touch to keep you going. And in the end when your body dies, you won't even have that. Just an eternity of empty blackness. The plain, Robb, forever and ever. And I won't be able to reach you, not ever. But it doesn't have to be . . .

No.

Oh, Robb. I'm fading. Please come.

No. Lya, don't go. I love you, Lya. Don't leave me.

I love you, Robb. I did. I really did . . .

And then she was gone. I was alone on the plain again. A wind was blowing from somewhere, and it whipped her fading words away from me, out into the cold vastness of infinity.

In the cheerless morning, the outer door was unlocked. I ascended the tower and found Valcarenghi alone in his office. "Do you believe in God?" I asked him.

He looked up, smiled. "Sure." Said lightly. I was reading him. It was a subject he'd never thought about.

"I don't," I said. "Neither did Lya. Most Talents are atheists, you know. There was an experiment tried back on Old Earth fifty years ago. It was organized by a major Talent named Linnel, who was also devoutly religious. He thought that by using drugs, and linking together the minds of the world's most potent Talents, he could reach something he called the Universal Yes-I-Live. Also known as God. The experiment was a dismal failure, but *something* happened. Linnel went mad, and the others came away with only a vision of a vast, dark, uncaring nothingness, a void without reason or form or meaning. Other Talents have felt the same way, and Normals too. Centuries ago there was a poet named Arnold, who wrote of a darkling plain. The poem's in one of the old languages, but it's worth reading. It shows—fear, I think. Something basic in man, some dread of being alone in the cosmos. Maybe it's just fear of death, maybe it's more. I don't know. But it's primal. All men are forever alone, but they don't want to be. They're always searching, trying to make contact, trying to reach others across the void. Some people never succeed, some break through occasionally. Lya and I were lucky. But it's never permanent. In the end you're alone again, back on the darkling plain. You see, Dino? *Do you see?*"

He smiled an amused little smile. Not derisive—that wasn't his style—just surprised and disbelieving. "No," he said.

"Look again, then. Always people are reaching for something, for someone, searching. Talk, Talent, love, sex, it's all part of the same thing, the same search. And gods, too. Man invents gods because he's afraid of being alone, scared of an empty universe, scared of the darkling plain. That's why your men are converting, Dino, that's why people are going over. They've found God, or as much of a God as they're ever likely to find. The Union is a mass-mind, an immortal mass-mind, many in one, all love. The Shkeen don't die, dammit. No wonder they don't have the concept of an afterlife. They *know* there's a God. Maybe it didn't create the universe, but it's love, pure love, and they say that God is love, don't they? Or maybe what we call love is a tiny piece of God. I don't care, whatever it is, the Union is it. The end of the search for the Shkeen, and for Man too. We're alike after all, we're so alike it hurts."

Valcarenghi gave his exaggerated sigh. "Robb, you're overwrought.

You sound like one of the Joined."

"Maybe that's just what I should be. Lya is. She's part of the Union now."

He blinked. "How do you know that?"

"She came to me last night, in a dream."

"Oh. A dream."

"It was *true,* dammit. It's all true."

Valcarenghi stood, and smiled. "I believe you," he said. "That is, I believe that the Greeshka uses a psi-lure, a love lure if you will, to draw in its prey, something so powerful that it convinces men—even you—that it's God. Dangerous, of course. I'll have to think about this before taking action. We could guard the caves to keep humans out, but there are too many caves. And sealing off the Greeshka wouldn't help our relations with the Shkeen. But now it's my problem. You've done your job."

I waited until he was through. "You're wrong, Dino. This is real, no trick, no illusion. I *felt* it, and Lya too. The Greeshka hasn't even a yes-I-live, let alone a psi-lure strong enough to bring in Shkeen and men."

"You expect me to believe that God is an animal who lives in the caves of Shkea?"

"Yes."

"Robb, that's absurd, and you know it. You think the Shkeen have found the answer to the mysteries of creation. But look at them. The oldest civilized race in known space, but they've been stuck in the Bronze Age for fourteen thousand years. We came to *them.* Where are their spaceships? Where are their towers?"

"Where are our bells?" I said. "And our joy? They're happy, Dino. Are we? Maybe they've found what we're still looking for. Why the hell is man so driven, anyway? Why is he out to conquer the galaxy, the universe, whatever? Looking for God, maybe . . . ? maybe. He can't find him anywhere, though, so on he goes, on and on, always looking. But always back to the same darkling plain in the end."

"Compare the accomplishments. I'll take humanity's record."

"Is it worth it?"

"I think so." He went to the window, and looked out. "We've got the only Tower on their world," he said, smiling, as he looked down through the clouds.

"They've got the only God in our universe," I told him. But he only smiled.

"All right, Robb," he said, when he finally turned from the window. "I'll keep all this in mind. And we'll find Lyanna for you."

My voice softened. "Lya is lost," I said. "I know that now. I will be too, if I wait. I'm leaving tonight. I'll book passage on the first ship out to Baldur."

He nodded. "If you like. I'll have your money ready." He grinned.

"And we'll send Lya after you, when we find her. I imagine she'll be a little miffed, but that's your worry."

I didn't answer. Instead I shrugged, and headed for the tube. I was almost there when he stopped me.

"Wait," he said. "How about dinner tonight? You've done a good job for us. We're having a farewell party anyway, Laurie and me. She's leaving too."

"I'm sorry," I said.

His turn to shrug. "What for? Laurie's a beautiful person, and I'll miss her. But it's no tragedy. There are other beautiful people. I think she was getting restless with Shkea, anyway."

I'd almost forgotten my Talent, in my heat and the pain of my loss. I remembered it now. I read him. There was no sorrow, no pain, just a vague disappointment. And below that, his wall. Always the

wall, keeping him apart, this man who was a first-name friend to everyone and an intimate to none. And on it, it was almost as if there were a sign that read, THIS FAR YOU GO, AND NO FARTHER.

"Come up," he said. "It should be fun." I nodded.

I asked myself, when my ship lifted off, why I was leaving.

Maybe to return home. We have a house on Baldur, away from the cities, on one of the undeveloped continents with only wilderness for a neighbor. It stands on a cliff, above a high waterfall that tumbles endlessly down into a shaded green pool. Lya and I swam there often, in the sunlit days between assignments. And afterwards we'd lie down nude in the shade of the orangespice trees, and make love on a carpet of silver moss. Maybe I'm returning to that. But it won't be the same without Lya, lost Lya . . .

Lya whom I still could have. Whom I could have now. It would be easy, so easy. A slow stroll into a darkened cave, a short sleep. Then Lya with me for eternity, in me, sharing me, being me, and I her. Loving and knowing more of each other than men can ever do. Union and joy, and no darkness again, ever. God. If I believed that, what I told Valcarenghi, then why did I tell Lya no?

Maybe because I'm not sure. Maybe I still hope, for something still greater and more loving than the Union, for the God they told me of so long ago. Maybe I'm taking a risk, because part of me still believes. But if I'm wrong . . . then the darkness, and the plain . . .

But maybe it's something else, something I saw in Valcarenghi, something that made me doubt what I had said. For man is more than Shkeen, somehow; there are men like Dino and Gourlay as well as Lya and Gustaffson, men who fear love and Union as much as they crave it. A dichotomy, then. Man has two primal urges, and the Shkeen only one? If so, perhaps there is a human answer, to reach and join and not be alone, and yet to still be men.

I do not envy Valcarenghi. He cries behind his wall, I think, and no one knows, not even he. And no one will ever know, and in the end he'll always be alone in smiling pain. No, I do not envy Dino.

Yet there is something of him in me, Lya, as well as much of you. And that is why I ran, though I loved you.

Laurie Blackburn was on the ship with me. I ate with her after liftoff, and we spent the evening talking over wine. Not a happy conversation, maybe, but a human one. Both of us needed someone, and we reached out.

Afterwards, I took her back to my cabin, and made love to her as fiercely as I could. Then, the darkness softened, we held each other and talked away the night. ■

THE REFERENCE LIBRARY

P. Schuyler Miller

BUGS

A pseudo-documentary, "The Hellstrom Chronicle," took the Cannes Film Festival's *Grand Prix de Technique* in 1971 and is now going the television route. I haven't seen it, but the reviews indicate that it used a remarkable combination of nature photography and clips from monster movies (Volume 2 of Walt Lee's indispensable "Reference Guide to Fantastic Films" lists "The Naked Jungle" and "Them") to warn that insects will—and perhaps should—inherit the Earth.

Now two vigorous SF novels, one of them a direct spin-off, develop the same message in very different ways. They would both make good films; in fact, one of them is in the works. That one is "The Hephaestus Plague" by Thomas Page (G.P. Putnam's Sons; 191 pp; $5.95). The other is a Science Fiction Book Club hardback original, Frank Herbert's "Hellstrom's Hive" (Nelson Doubleday; 278 pp; $1.89+), which should be a Bantam paperback at 95¢ before you see this.

"The Hephaestus Plague" is the better of the two, and it should make a better film than "The Andromeda Strain" if they handle it properly. It runs a bit wild near the end, but for most of the way it gives you a lovely combination of full-blooded characterization and science-in-action—in this case, of course, entomology. An earthquake opens a gash in a Carolina peach orchard, out of which crawl a horde of well-nigh indestructible, black, chirping insects that set fires wherever they go. They look like beetles (spelled "beatles" in a couple of places, in a probably inadvertent attempt to close the generation gap), but they turn out to be cockroaches, sealed up underground for hundreds of millions of years and evolved into something remarkable. They spread, and on many fronts scientists and bureaucrats try to cope with them—and, as the fires spread, to stop them. The Smithsonian's Institute of Short-Lived Phenomena is busy; so is the Department of Agriculture; so are scientists in leading universities—and so is Professor James Lang Parmiter of little ol' Bainboro College and his put-upon graduate assistant, Gerald Metbaum.

Parmiter takes an early lead by

identifying the bugs as roaches, and tags them with his name: *Hephaestus parmitera.* He and Metbaum maintain their lead over their colleagues and rivals in science—and hell really breaks loose when Parmiter hybridizes them with a Madagascan roach, Madilene. Credulity twangs a bit when the new generation start spelling out words on Parmiter's wall, and the "solution" is something of a cop-out, but you'll enjoy every moment of the trip there. Thomas Page really makes his story live.

The fictional Dr. Nils Hellstrom who was narrator and alleged producer of "The Hellstrom Chronicle" is the main character—I can't say hero—of Frank Herbert's "Hellstrom's Hive." He is not, as I thought for a time, a humanoid insect, but he is a member of a breeding cult—in its way, something like Heinlein's Howard Families—which is trying to make men over in the image of insects. They use genetic techniques, special foods like bees' royal jelly, and a host of other scientific and technological devices to create specialized forms—neuter workers and soldiers, brood mothers, and others whose specialization is only suggested. A few, like Nils Hellstrom, are trained to "pass" and provide liaison with the Outside. His film, and others he makes in a barn studio on a remote California farm, provides a screen and an income for the "Hive" that has been dug thousands of feet into the ground under the valley.

The book starts when agents of an unidentified agency—it may be a government undercover group, or it may even be an industrialists' private CIA—zero in on Hellstrom's farm and are caught in a night sweep for protein to feed the swarm. With complete ruthlessness, the Agency sends in more; it wants to find out what "Project 40" is, and get control of it if it is valuable. ("Project 40" was the name of the *Galaxy* serialization.) With even greater ruthlessness, Hellstrom and his staff trap them, strip them of information, and consign them to the food vats. Chapter by chapter and page by page the pitch rises, to one final holocaust when the troops close in and Project 40 comes to completion and begins to tear the Earth apart.

In a way, both books are hokum—good old traditional monster stuff. But Frank Herbert keeps his pot boiling so vigorously, and Thomas Page's stew has such a rich flavor, that they make your mouth water. They can make wonderful SF films, or terrible ones. If the producer of "The Hellstrom Chronicle" were to use the script of "The Hephaestus Plague," and play it straight, we might have a film to remember.

NEBULA AWARD STORIES EIGHT

edited by Isaac Asimov • Harper & Row, New York • 1973 • 248 pp. • $6.95

Isaac Asimov, who seemed doomed forever to present the Nebula and Hugo awards for best science fiction to other writers but never to get one of his own, scored

a double last year when his novel, "The Gods Themselves," won both awards. (This has happened three times, with Frank Herbert's "Dune" for 1965, the first year for which Nebulas were awarded by the Science Fiction Writers of America, Ursula Le Guin's "The Left Hand of Darkness" for 1969, and Larry Niven's "Ringworld" for 1970. There have been a number of doubles in shorter fiction categories, including Poul Anderson's "Goat Song" last year and "The Queen of Air and Darkness" for 1971—the only double doubler.)

Dr. Asimov also took on the job of editing this anthology containing the three short fiction winners—Arthur C. Clarke's "A Meeting with Medusa," the aforesaid "Goat Song," and Joanna Russ' short story, "When It Changed"—and five of the close runners-up. He has also contributed a thoughtful introduction, which I expect to see reprinted in the SF/scholarly journals as often as the publisher will permit. It is as good an analysis as we have had of what science fiction is, how it is fundamentally different from other *genre* fiction (mysteries, westerns, adventure yarns, love stories), and why it stands a good chance of surviving when fiction *per se* seems on its way out.

I have, I think, commented on all but three of the stories here in reviews of other anthologies. "When It Changed" subtly and cruelly shows us a world where women have learned to build a socially and genetically viable society without men, after an epidemic that destroyed all males. Then men return from Earth, technological giants but genetic cripples, and demand Whileaway's pool of sound, strong genes. Harlan Ellison's "On the Downhill Side" is the book's only fantasy. It is one of the author's new, lovely, and "atypical" (whatever that means) cycle of stories about New Orleans—the story of two ghosts who died without knowing what love means, and a unicorn that does know all too well. To parrot a statement that has been made by others, about others, it seems that Harlan can do anything—and does.

The third story is one I have recommended enthusiastically before, and will whenever the opportunity arises—Gene Wolfe's remarkable "The Fifth Head of Cerberus." This is the first part of the novel of the same name, which I have noticed here. Read the novelette, by all means—but read the whole book too.

I'll simply catalog the others; you should know them all by now. Frederik Pohl's "Shaffery Among the Immortals." William Rotsler's "Patron of the Arts"—which he is said to be making part of a novel. Robert Silverberg's "When We Went to See the End of the World." As I've said, the introduction isn't to be missed, and the book becomes a valuable reference with an appendix that lists all the Nebula and Hugo winners since 1965, the first year for which both awards existed.

One minor factual correction. The Nebula trophies were intended to contain clusters of quartz crystals, but interior decorators decreed

that rocks of all kinds should be "in" cocktail table conversation pieces, and the rock shops have been picked clean. The SFWA has had to use other kinds of attractively shaped and colored crystals. It's still true that no two are alike—in crystals, in the glitter nebulas that float above them, and apparently in size as well. (I'm told there was much amusement last year over the differences.) The maker aims at the four-by-four-by-nine dimensions, but after embedding the crystals and nebula under heat and pressure he has to grind and buff the clear Lucite blocks down to make them mirror-smooth and remove any surface blemishes. Every Nebula award is completely different from every other one.

THE QUEEN OF AIR AND DARKNESS

by Poul Anderson • Signet Books, New York • No. Q5713 • 149 pp. • 95¢

The six stories in this book, including the double-award-winning title story, continue Poul Anderson's exploration of what might be called the social ontogeny of interstellar civilization. As his other stories have done, these introduce a quantitative element into anthropology and sociology. The times involved in interstellar passage, even at near-light-speeds, recreate a situation not unlike the years-long passages of the era of sailing ships . . . or even better, of oar and sail in the Bronze Age. At light speeds, there is the added factor of temporal contraction that puts ship people ever further out of phase with planetary populations—a theme that is neatly developed in "Time Lag."

In "The Queen of Air and Darkness," colonists who have lived on Roland have developed a strange pattern of myth and tradition, based on their unconscious interaction with the native population. It is a kind of biofeedback, since the natives can draw archetypes out of the settlers' own minds and return them as illusion. The story earned its Hugo and Nebula awards.

In "Home," people who have reached a happy accommodation with the natives of their world (as with the Ythrians in the author's latest cycle of stories) are called back for reasons which are not evident at first sight. In "The Alien Enemy," the colonists of Sibylla handle a similar situation in a very different way.

Apparently *Boys' Life,* the Boy Scout magazine which I haven't seen for years, is publishing some pretty thought-provoking science fiction—perhaps simpler than the kind that appears here, or in the other adult science fiction magazines, but by no means written down. "The Faun" is a short, simple parable of youth and ecology that adds depth to Earth Day.

"In the Shadow" is that self-contradictory thing, a "hard science" story from *Fantasy & Science Fiction.* It brings to life an extraordinary concept proposed in 1965 in *Physical Review Letters*—shadow matter, with which normal matter can interact only through the

"weak" forces. One of these is gravitation, so you can't see a shadow star or a shadow planet, but you can put your ship into orbit around it.

"The Alien Enemy" is one of two stories originally published here under the pen name "Michael Karageorge." (Watch for it if it turns up again.) The other is "Time Lag." In that story, check the comments on the "rights" of overpopulation on page 124. Then pick up your newspaper.

Haven't I heard someone complaining that science fiction isn't "relevant"?

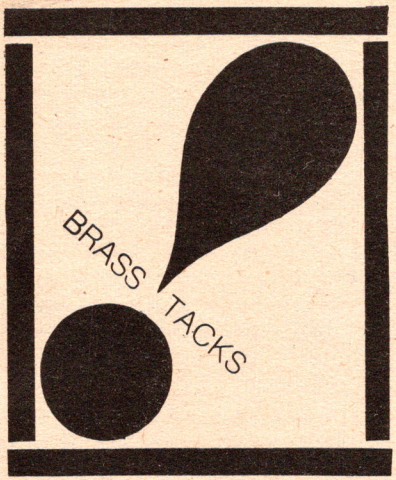
OUR CHILDREN'S CHILDREN
by Clifford D. Simak • G.P. Putnam's Sons, New York • 1973 • 186 pp. • $5.95

As a veteran newspaperman, Clifford Simak has been as capable as anyone of seeing the tensions building up in our society. The crisis that precipitates the crunch in his book isn't the Yom Kippur War and the Arab oil freeze, but what happens to the shaky edifice of our bureaucracy is not so unlike what you see happening now.

Not very far in our future, holes open all over the world, and people begin marching out, rather like the marching Chinese in the old "Believe It or Not" features. They are our children's children from five hundred years in the future. In their time, Earth has been invaded by ravening monsters from space. It is never really clear that these creatures are the space-farers themselves; they may be a kind of clean-up squad, dropped by the real voyagers to get rid of local opposition. But after twenty years of fighting, mankind has no way out but to flee into its past—into our time, with the hope of getting our help to continue into the Miocene, far enough back that they can start a new time-line without interfering with ours (and theirs). After all, if they were to settle in the early Pleistocene and wipe out *Australopithecus* through disease or competition, mankind would never have evolved.

But this isn't a story of time paradoxes, except peripherally. It is a story of what a suddenly doubled population—plus incursion of some of the pursuing monsters, which multiply like bacteria—does to our society and to certain people in it. With an election coming up, how should an ambitious President react? Will the Soviets attempt a takeover? Will opposition politicians take the risk of destroying society, as long as they come out on top of the debris? Legitimate questions all—not really explored in depth, but raised for you to gnaw on.

This is an "idea as hero" story, and by no means one of the author's best. The solution that saves America and the world and our children's children is legitimate—the seeds are properly planted early in the book—but it comes out as a *deus ex machina* trick of venerable format. None of the many characters really matter. But try to convince yourself that this isn't just what we would do if it were a real situation.



Dear Ben:

You may be interested to know that the January Analog with "Space Probe from Epsilon Boötis?" is completely unavailable everywhere in Britain, having undergone a total sell-out everywhere in a matter of days . . .

Things are really moving now in the investigation: (1) A detailed break-down of echo dates and times, 1927-1970, makes it virtually certain that the echoes come from the Moon Equilateral points—both of them, but with a bias for the Trailing point. (2) The Russian announcement of possible live signals from a probe suggests that echoes since 1929 have been straightforward attention-getting signals, that is, the probe switched communications modes. (3) On the other hand, Mr. Lawton is publishing a new hypothesis of natural LDE generation beyond the atmosphere. If "all" I drew attention to was a previously unknown physical effect in the Earth-Moon system, I won't have any complaints; but I'm far from giving up the probe, because *if* the new mechanism operates, it would be greatly enhanced by the presence of a ramscoop vehicle in one or both Equilaterals, running its magnetic or electrostatic plasma collector to tap solar wind for power. So now we have the possibility that a probe could generate echoes deliberately, or even accidentally (if the probe-makers' planet didn't have a magnetic field, they might not foresee it happening) by this mechanism, but the echo patterns may be partly or wholly random. (4) Six more 1920's records have now come to light, and my conjectures from broken records aren't borne out. But we now have ten records (one still inaccurate) in four of which there's a figure resembling Boötes with an accompanying 7-dot line. If it's not a star map, surely it must have some kind of significance, if only as a "signature" of the generating field.

I shall be submitting a paper to the BIS in reply to Mr. Lawton's, outlining the reasons why the probe hypothesis is still in good shape, indeed strengthened, by these four developments.

DUNCAN LUNAN

The space-probe hypothesis has attracted attention on this side of the Atlantic, too.

Dear Mr. Bova:

I have only one word for the

January 1974 issue of Analog: *great!*

I read "The Horus Errand" by William E. Cochrane in the club car of an express train from New York to Washington. I was so absorbed in it that the conductor had to tell me three times to get off. I am not familiar with Mr. Cochrane's work, but I look forward to more of it in the future.

"The Astounding Dr. Amizov" by R.F. DeBaun was a perfect gem. I roared with laughter over it (causing several people I was riding with to move away from me as though I had something contagious). More DeBaun stories, please!

Larry Niven has added another jewel to his crown with "The Hole Man." What else can I say about it? I have always enjoyed Niven stories and hope to do so again in the future.

In "The Sins of the Fathers," I found that Stanley Schmidt has written something more psychological than otherwise. I would have made the decision Clark did, but how many others would have, and of those who would have, how many would have taken the full responsibility for it? My only criticism is that only Clark seems to me to be a three-dimensional character.

"Space Probe from Epsilon Boötis?" by Duncan Lunan excited me very much. I have always said that there *must* be someone else out there, and some of my friends have considered getting me psychiatric treatment for what they consider a mental aberration, especially with certain governmental agencies passing off UFO sightings as hallucinations. I have one comment to make, however, about the closing of the article. Presupposing that the society of Epsilon Boötis has not disintegrated and their technology lost, and that they were able to escape from their planet's climatic problems (either by moving on or using their science to alter the conditions to where they are livable), would they not have kept monitoring the probe? Would they have forgotten it? It seems an obvious attempt to contact another intelligent race, and it seems to me that unless catastrophe had hit them, they would still be watching and waiting for an answer.

Last but not least, the guest editorial was written by my favorite author (or rather, spoken, as it was an address). Thank you, Robert A. Heinlein.

LISA DUDLEY
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Signals from the probe to "back home" would take at least seventy years to reach Epsilon Boötis. So we won't get any reaction from them for another century, at best.

Dear Mr. Bova:

I read with interest the article "Space Probe from Epsilon Boötis?" in the January issue, although I wish to point to some facts which may affect the conclusion proposed in the article.

In the first experiment on October 11, 1928, Van der Pol used 120 signals in the hour between 19.00 and 20.00 GMT, from which he re-

ceived 13 LDE's; a success rate of 1 in 9. With such a rate it would be extremely easy to make an error, and the result of just one mistake would be that Figure 1 of Mr. Lunan's paper would no longer resemble a star map of Boötes.

During the second series of experiments a base at Oslo together with two at Eindhoven were used. The prime point of interest is that two methods of timing were used, neither of which could be considered very accurate. Timings at Eindhoven II, and presumably Oslo, were conducted using an ordinary clock, with a resulting accuracy of approximately ±1 second. At Eindhoven I a stopwatch was used, increasing the accuracy; however, only four observations at this station appear in Van der Pol's paper. If we add to this a half of the 1.5 seconds which he states as the echo duration, we arrive at a possible error of about ±2 seconds on each timing.

If we accept the theory of an artificial satellite in one of the two Lagrange positions, it should be possible to decide which one it occupies from two separate experiments (assuming two satellites are not in orbit). Using the nomenclature of Lagrange I and II for the west and east positions respectively, the times at which they were observable from Eindhoven are shown below (all times are GMT).

		Oct. 11	*Oct. 24*
Lagrange I	rises	23.21	11.38
	sets	13.01	20.14
Lagrange II	rises	07.21	19.38
	sets	21.01	04.00
			(Oct. 25)

On October 11 the Stormer/Van der Pol series of tests lasted from about 12.00 to 20.00 and on the 24th from 16.00 to 17.00. It therefore appears that neither of the Lagrange positions was observable on *both* occasions, and so one satellite in lunar orbit cannot explain the long-delayed echo phenomenon.

M. S. DRAPER
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Several groups of astronomers are cooperating with Lunan and EMI, Ltd. in an attempt to search the sky for the probe. Lunan's conclusions may be wrong, and perhaps there is no probe from Epsilon Boötis. But the staggering impact of actually discovering that there is intelligent life elsewhere in the universe makes it worth our while to pursue even the low-probability avenues of search.

Dear Mr. Bova:

"Space Probe from Epsilon Boötis?" by Duncan Lunan was a fascinating and thought-provoking article. The lunar libration points are gravitationally equidistant null points ahead of and trailing the Moon and it is perfectly possible for a device to be positioned there and to retain this position for eternity. Faint clouds of dust have been mapped at these positions. I doubt these are responsible for anomalous radio echoes and suspect it may be a whistler phenomenon, although whistlers generally show changes in frequency.

Plotting echo returns to form star

maps is really forcing a solution. To explain the misplacement of one star in an asterism as due to proper motions does not hold water unless all stars in the group are similarly treated. And of course, the picture of Boötes is merely coincidence, since many star groups can be force-fitted into that picture—hundreds if telescopic stars are included. If the probe is indeed from Boötes it would be difficult to explain why the constellation group presented is similar to that seen from Earth. Such a picture could only be presented by an entity close to our Solar System.

However, to assume that because the plotted echoes derive from a superior intelligence they must represent a star system known to us is fallacious. For example, in my office I have fluorescent lights over a translucent screen displaying the dead bodies of a dozen or more flies. By moving one fly a couple of inches, I can make a remarkably good representation of the constellation Hercules. Does this mean that the flies are arranged by a superior being or that they are really a message from outer space?

The translation of the patterns of page 80 belongs in a comic book. Pure speculation, unsupported by facts. Lunan does not go far enough, he should perhaps use star maps in both the UV and IR which may give further clues. The constellations appear quite different when viewed in other parts of the electromagnetic spectrum.

The article is an excellent example of original thinking which may well lead to unsuspected truths if properly followed up. Unfortunately, professional astronomers will ignore it since they cannot or will not conceive that anybody outside their tight little group can add one jot to astronomical knowledge.

RAY D. MANNERS
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The assumption is that the astronomers of Epsilon Boötis, if they exist, could determine how the constellations appear from Earth, and use that information as a communications medium. Only the conclusions of the interpretations were given for the more complex graphs, since we didn't have space for the details of the "translations." Lunan has published these details in the journal of the British Interplanetary Society. The only explanation for the Boötes astronomers showing star charts in "visible light," rather than IR or UV is that they also live in an oxygen/nitrogen atmosphere that absorbs strongly at wavelengths other than "visible."

Dear Ben:

In reference to Duncan Lunan's article "Space Probe from Epsilon Boötis?" I can only say "?" indeed.

The society on Izar VI must have been either very advanced or very primitive to use only radio for space communications. What if a society advanced enough to rescue the Izarviians doesn't use radio at all? The satellite may also be pulsing muons, modulating gravity waves, or sending tachyon television.

From the *QST* articles by O. G. Villard, Jr. *et al.* on LDE I gather

that the primary obstacle to current LDE experimentation is the crowding of the radio frequency spectrum since the 1920's. There isn't enough clear frequency to bounce any signal and be certain the echo is from yours alone. One of Villard's examples is a possible echo of noise. A satellite that repeats everything can't be expecting an answer.

JACK M. LINTHICUM
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If the scientists on Izar VI are at all brainy, they might recall their own technological history, and have an array of many communications devices aboard their probes.

Dear Mr. Bova:

. . . A graph of how long-delayed echoes reported in 1968-69 fell with respect to the position of the Moon in the sky gives a . . . distribution of points that looks random enough to me, and I was struck by the similarity to some of Lunan's pictures in the article . . .

If anything, the way long-delayed echoes seem to occur most often near local moonrise might imply that Lunan's cosmic repeater is in the *trailing* Lagrangian point, 60 degrees to the *right* of the Moon when seen from the Northern Hemisphere. That would make the repeater nearly overhead when the Moon is rising. At the frequencies where these echoes were observed, only signals going nearly vertically escape reflection or absorption by the ionosphere.

By the way . . . over a hundred radio amateurs in the US (and elsewhere) are successfully making Earth-Moon-Earth contacts today. However, they use the frequencies for which the ionosphere is practically transparent, above 50 MHz, and most reported long-delayed echoes occur in the 2-30 MHz range.

At any rate, no repeater at lunar distances can possibly (tachyons excluded!) explain echoes observed with delays of ½-2 seconds, and such echoes form almost half of all those reported. If ionospheric phenomena produce them, perhaps the same phenomena produced Lunan's echoes.

But it's easy to scoff at a new idea . . . even if the probability is 0.99999 . . . 9 that Lunan is wrong, he deserves praise for his imagination, at least. Thanks for printing an interesting article! But is it "Science Fact"?

MARK ZIMMERMAN
6812 Langston Drive
Austin, Texas 78723

Lunan's idea is speculation, based on fact. So was Copernicus' idea—originally.

Dear Mr. Bova:

I am writing to express my shock and dismay at your selection of the story "Soldiers' Home" in the December 1973 Analog. I have been a reader of your magazine for about five years, and this story must easily win the distinction of being the worst published in that time.

I have the distinct impression that Mr. Perkins contrived this story in order that he might have a vehicle to express his political opinions, and in doing so gave little

thought to its entertainment value. Political satire *is* in the finest tradition of American literature, but I hardly feel that "Soldiers' Home" merits this label. Rather, it seems a clumsy, badly-planned attempt on the part of Mr. Perkins to express some rather traditional and oft-repeated arguments against pacifism. His intentional slander (page 148, ". . . peace freaks . . .") of those who have and do advocate peace only serves to add insult to injury.

I appreciate and respect Mr. Perkins' right to express his views; however, I feel that the editorial or letters section of your magazine might be a more appropriate place to do so. I might add that my objection would have been equally as strong had Mr. Perkins expressed opposite views; my argument is not with the content but rather with the manner of his expression.

Finally, as a graduate student in clinical psychology, I might suggest to Mr. Perkins that he do a little homework on the nature of psychosis and delusional systems before attempting to write another story of this type; there is enough public misinformation about my profession without Mr. Perkins adding to it.

MICHAEL S. COHN
1628½ Stone Avenue
Los Angeles, California 90025

"Soldiers' Home" is a completely self-consistent story, granted the assumption that other nations would attempt to conquer the US (or Israel, or Tasmania) if they thought they could get away with it. We have all been badly scarred by the Vietnam experience, and we all hope for a just and lasting world peace. Some of us even work for it. The peace demonstrators of the Sixties helped to get us out of Vietnam; without their courage and their faith, we would probably still be fighting that endless war. But Perkins is showing what could happen if such a movement went far enough to really weaken the US's ability to defend itself. This is a thoroughly legitimate stance for a science-fiction story. And if it makes the reader uncomfortable, it just might be because it's challenging some assumptions that are not as defensible as the reader thought!

Dear Mr. Bova:

I should like to protest about the effect your publication is having on my marriage. Once a month Analog slides through our letter box, and I spend a despondent day wondering how badly I shall be neglected when my husband comes home from work and finds it.

Analog leads him to shovel my most delectable dishes into an unappreciative maw—I swear that I could be feeding him sawdust and grass clippings and he wouldn't notice—in fact, he neglects food, drink, chores and me for your publication. I wouldn't mind too much, but his habit of reading it while sitting enthroned leads to bottlenecks in the bog—we are not privileged and have only one lavatory.

Could you suggest any way of saving our marriage?

ROSEMARY RABSON
29 Broomfield Crescent
Wivenhoe, Essex, England

Two subscriptions?

EDITORIAL

continued from page 8

what shaky experience of meeting a lovely, leggy, blond engineer who was, in her spare time, teaching a science fiction course at an eastern technical college. It was a shaky experience because, when I asked her how she was chosen to teach the course, she told me this story:

"I went to the dean and told him we ought to have a science fiction course. He agreed. Then he asked me who would teach it. I said I would. He asked me what my qualifications were. I said I'd read 'The Martian Chronicles' and 'Stranger in a Strange Land' and all that. He said, 'Well, that makes you the local expert. OK, you can teach the course.' "

I can imagine myself going up to the head of the anthropology department at a similar school and telling him that I'd like to teach an anthropology course. When he asked for my qualifications, I'd say, "Well, I've read Carleton Coon and Margaret Mead and all that stuff."

The point is, there is a certain body of knowledge that should be required of anyone who teaches a course in science fiction. Our field is as complex as they come, with its roots in literature, history, science and technology, social change, et cetera. No English department would let someone teach an English course unless he or she had some demonstrable qualifications in the field—papers published in the professional scholarly journals, or works of fiction published in the press. Something. Not just an earnest desire.

There is a professional society devoted to teaching science fiction, called the Science Fiction Research Association. But it is doing nothing about setting and demanding professional qualifications among SF teachers. SFRA is so new, its leaders claim, that its main interest lies in getting dues-paying members so that the organization can become strong. It will accept membership from just about anyone: teachers, writers, librarians, even people who merely "express a sincere interest in science fiction."

This is not professionalism, and it will not lead to a professional attitude toward the teaching of science fiction.

I am *not* advocating a stuffy, academic closed-mindedness toward who should be allowed to teach science fiction. That long-legged blond might be a *terrific* teacher. But I don't think she—or many, many others like her—knows much about the history of our field, the influences of various writers, the interplay between technology and story subjects, and many of the other facets that are important for an understanding of SF.

The people who will get hurt first by this are the students. Those who take a science fiction course because they're seriously interested in the field will get short-changed.

Those who take an SF course because they're curious about science fiction will quickly get turned off by inadequate teaching. (There are also those who take SF courses because they're good for an easy credit; who ever flunked science fiction?)

In the longer run, all of us will be hurt, too. Because our field will not grow as it might if the majority of those students came away from their courses satisfied and eager to learn more.

It's happened to science fiction before. There was a boom in our field just after the end of World War Two, when the advent of nuclear weaponry made it clear to many who had scoffed at SF that we were speaking prophetically. That boom ended rather quickly. There was another flurry of interest just after Sputnik, in the late 1950's, but it petered out fast, too.

All through the 1960's, though, the interest in science fiction on campus has been steadily growing. And now it has become "respectable" enough to be considered legitimate material for classes.

Fine. But if these classes result in disillusionment, then these hard-won gains will evaporate, and it will take another generation before anyone can mention science fiction in "respectable" company again.

We have come a long way in *this* generation. There are many good teachers of science fiction. The basic idea of the Science Fiction Research Association is a good one, even though the chalkdust aura of academia seems incongruous in the

in times to come The era of confrontation known as the Cold War has been over for some while, yet we still have international tensions, wars, intrigue and espionage. Two authors take very hard looks at how international politics affect solitary human beings, in next month's issue. Jerry Pournelle's lead novelette "Extreme Prejudice" and P. J. Plauger's "Dark Lantern" both show how government agencies can sometimes keep lumbering along the same path, like dinosaurs that don't realize they're extinct, destroying people and dreams along their way. The cover, by Leo Summers, shows the underwater community that Pournelle depicts in his story. As a bonus, Jerry shows how a city-sized community could draw its energy requirements from thermal gradients at different levels of the sea.

The science article is by George W. Harper, who proposes a novel form of solace for all the disappointed comet-watchers of last winter. It's called "Kohoutek: A Failure that Wasn't." It could also be called "A Comet that Wasn't."

The second installment of Tak Hallus' "Stargate" will grace the July issue, together with all the regular features and as many short stories as we can fit in—including, hopefully, Roger Zelazny's first appearance in Analog.

science fiction area. There are even good movies and television shows being done, with solid science fiction ideas and stories. And more to come.

But I fear a variation of Gresham's law, in which the bad teaching and *schlock* movies and TV shows will drive out the good ones.

This is something that SFRA and SFWA—Science Fiction Writers of America, the professional organization of the writers—should struggle against with every ounce of their strength.

There must be minimum standards for anyone who teaches a science fiction course. No less than there are standards for those who teach gym, history, criminology or English literature. SFRA could set out a suggested standard of qualifications, and urge colleges and universities to adhere to it.

There must also be minimum standards for the science fiction movies and TV shows that are being produced. But here, the standards will be made and enforced by the buying public, just as they have done for decades with magazines and books.

But wouldn't it be wise for SFWA—whose major officers are now located on the West Coast—to try to suggest to the Hollywood moguls that a science fiction show should have competent science fiction advice, just as a medical show has at least a pharmacist hanging around?

And it would be even wiser if the advice were heeded.

THE EDITOR

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